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ORIGINAL LECTURES.

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GENTLEMEN: I desire this evening to invite attention to the following problems which are to-day engaging the attention of the profession, and for which it is asking solutions:

1st. The relation of microbes to disease processes.

2d. Inoculation as a means of modifying or preventing disease.

3d. The causes of abnormal temperature in disease.

4th. The effects of antipyretics in the treatment of disease.

Every generation of medical workers has had its special theories and supposed discoveries, to test, to accept, or discard; but never before has the field of medical investigation been so extensive, the workers so many and able, and the methods of research so varied.

It may be interesting as well as instructive, by way of introduction, to sketch briefly some of the methods of investigations which in different ages have held the profession, and compare them with the methods of to-day. Before instituting any comparison, however, it is but just to recognize that all knowledge is of slow growth, and that the law of development applies to mind as well as to matter—we condemn methods and means, because they have been tried and found wanting, and not because of personal superiority of intellect—nineteenth century intellectuality must own its indebtedness to mistakes and failures which antedate the birth of Christ.

In every science results are reliable and valuable in direct ratio, not only to the accuracy with which deductions are made from given data, but also to the methods of reasoning, the truthfulness of postulates, or supposed facts, and the recognition of all the relations which may exist among determined facts under varying conditions.

No one can deny to the father of medicine equal ability with himself, even while criticising and condemning many of his arguments based upon well observed facts. He argued from but a few of the many correlated symptoms of any disease, in entire ignorance of all its primary pathological changes, and erected a system of medicine on the basis of his own observation. The earlier periods of medical history present themselves as curiosities rather than times which we may fairly criticise or compare with our own—medical investigation so superficial could hardly lay claim to the name of method—with but little anatomical and no pathological knowledge it is hardly to be wondered at that even the best minds were lost in the wildest forms of speculation.

We recognize most clearly that no one mind alone can advance medical knowledge, but by an infinitesimal degree, and even this is the result of a mutual interchange of thought. In ages then when strong minds were few and intercourse most limited, men must needs have been more than human to have accomplished more than the masters did. But ambition outran ability, for long before "ye men of Athens spent their days in hearing and telling some new thing," the same search for ultimate facts had been going on, and human minds impatient of meagre results gained through the hard logic of facts, easily drifted into the limitless sea of theory and quickly lost sight of the land of truth and possibility. To speak more exactly, the deductions of theories from few and isolated facts and the construction of entire systems of medicine upon a single and often unproved assumption is characteristic of the earlier ages of medicine. By how much is the medical mind different to-day; under greater restraints, by reason of sharper criticisms, and with broader foundations no such extensive speculative theories are offered for our consideration as mark the earlier history of medicine, but the same spirit remains as one of the heaviest clogs to the advancement of true medical knowledge.

When theoretical conclusions are put forth as established facts, and not as questions demanding experimental answers, then modern medicine is not only turning back to the darkness of earlier ages, but it is putting a stumbling block for the feet of those who follow.

There is no better test of the scientific mind than its power in deciding, after any given demonstration, between legitimate corollary and unfounded inference.

In no direction perhaps has medicine made greater advances in the last quarter of a century than in this; give us facts not fancies—proofs, not propositions, is the demand of the medical mind of to-day—"it is digested facts which nourish thought," not crude ones.

The empiricism of the Alexandrian school is perhaps the earliest system of medicine founded on a scientific basis, and offers the fairest points for comparison with the scientific empiricism of to-day. In this school anatomical and physiological investigations were recognized as essential to a thorough knowledge of disease. There was, however, a marked failure to recognize the necessity of determining the changes that were produced in organs and tissues by disease, and to connect morbid conditions with symptoms. Histological pathology was an impossibility without instruments of greater precision, and even gross pathology received no attention. Such a failure to appreciate the evident results of pathological processes is the more remarkable in a school which did more than all others of ancient times to advance medical knowledge.

Under the shadows of the granite hills of New Hampshire, on the banks of the Connecticut, the last resting place of one of the fathers of New England medicine is marked by a small white stone having only this inscription, "The Disciple of no Man." It is not alone the

description of that man, it is the keynote of modern medicine, and symbolizes one of the grandest changes which has ever revolutionized any science.

For nearly a thousand years the history of medicine may be traced by a few names. Schools were founded on men, not principles, until loyalty to one's master, the founder of a school, was stronger than loyalty to truth; and it was doubtless better, both for medical science and the patient, that the multitude were content to be led, and that between masters and pupils such relations should have existed. But that such a condition of affairs should have continued so long after the "period of letters" in Europe, is a cause for astonishment. Even as late as the sixteenth century, Galen and Aristotle, and the Arabic authorities, were the teachers of medicine throughout the civilized world.

When Ambrose Paré, defying the traditions of more than ten centuries, and the teachings of all authorities, took the bold step of tying an artery, he became the embodiment of that individuality and scientific scepticism which to-day are among the most striking characteristics of medical men—an individuality which thinks and decides for itself, a scepticism which doubts, not for the sake of doubting, but because it has too often leaned on broken reeds, too often placed its trust in authority only to find it like apples of Sodom. A scepticism which demands proofs and counter-proofs; which scans facts, not men, and learns to recognize truth whether offered from the wilds of the new world or the literary storehouses of the old. As a legitimate result of this spirit there has been developed, what is without question the greatest advance in methods ever made in medical science. It is the step which has made medicine truly scientific. From the crumbling ruins of abstruse theories and the wrecks of individual systems, overthrown by honest scepticism, comes the recognition of the fact that man is not an accident of undetermined forces—the one thing in all the grand scale from worlds to worms that is without plan, or subject to law—but rather the crowning glory of infinite wisdom, a machine of marvellous intricacy, yet subject to and obeying the laws of his being, with the same certainty as the sun holds his attendant planets in their unchanging way; and what has been the result? The medical world has started afresh at the very rudiments of the science. It has taken its primer, and in the kindergarten of the laboratory, it is seeking to know the laws of life and health, and the causes of disease. It has gone far beyond what antiquity ever dreamed. It has developed the empiricism of the Alexandrians, and curbed the philosophy of the Greek. It is seeking to unite scientific empiricism, with equally scientific theory, into one perfect whole; to have all theories based upon clearly determined facts, and to use such theories only as guides to the discovery of the next link in the chain which shall some day bind in eternal subjection the bacillus that walketh by day, and the coccus that rageth by night. When the medical history of the nineteenth century shall be written, it will be that of the laboratory, and the names which the twentieth century will honor, are the names of those who have devoted their lives to establishing the unchanging laws of both health and disease which govern this infinitely complex machine which Infinite power has made in His own image.

Our first problem for discussion is

THE RELATION OF MICROBES TO DISEASE PROCESSES.

In looking over the field of bacteriological research for the past ten years, one is struck by the continuous, painstaking investigation of a vast number of observers. Never before has there been so little theorizing, with so much work, and the facts which have finally been accepted are such as have come to light only after a long series of carefully made and oft-repeated experiments. One investigator makes a statement, immediately, in a dozen different countries, and by hundreds of observers, his experiments are repeated; his statement of facts proved or disproved, and his conclusions accepted or discarded. The results which have been reached in so short a period prove the wisdom of Agassiz's principle, "That science suffers by every diversion of the energy of scientists, which tends to substitute premature theorizing for continuous investigation."

It is not my purpose to consider the biology of the different varieties of the bacteria—the conditions of their life—their susceptibility to be influenced by temperature—by the different media in which they grow, nor yet in turn how they act and react upon each other, and upon the substances which have nourished them. It must suffice merely to touch upon the practical questions presented by such studies. The life history of some forms of bacteria has been very thoroughly worked out, but the majority have been as yet imperfectly studied. On account of their universality and their peculiar vital properties, the question which most interests us as practising physicians is, May not these microbes have the power of originating and controlling many of the morbid processes which take place in disease? When we consider the millions of microbes by which we are constantly surrounded—that the soil beneath us and the air around us is laden with them—that they enter the body in the very air we breathe, the food we eat, the water we drink, and yet, their influence is baneful only under certain conditions; that it is even possible for men to live in an atmosphere and surroundings which are ladened with the most pernicious forms of bacterial life, and yet be perfectly well, the question comes to us, Why is this? If this question is ever answered, it will not be until we have a fuller knowledge of the conditions of life, and the inherent properties of even the most carefully studied varieties of bacterial life; nor until we are able to trace more fully the cause and manner of their disappearance after they have gained an entrance into the healthy organism which is able to resist their invasion. It may be regarded as demonstrated that when certain pathogenic microbes have gained entrance into the body and reached localities which afford certain conditions for their development they multiply and form colonies, but what these conditions are is not definitely determined. For example, if a mass containing different varieties of bacteria is introduced into an animal, some will find a suitable soil and multiply, others will die—while if a similar mass is introduced into an animal of a different species, those bacteria which develop in the first animal will perish in the second—as the bacterial colonies enlarge or multiply they invade the surrounding tissue cells, and in time produce degeneration and necrosis of the affected part; as a result of the disturbance of the circulation, the walls of the bloodvessels are weakened and the microbes gain entrance to the blood current. In a similar manner the

lymphatics are invaded. If the blood or lymph offers conditions suitable for their growth they multiply rapidly, otherwise they perish—their death is supposed by some to be due to the special action of the white corpuscles. Some bacteria flourish best in blood which is flowing, as the bacillus anthrax—others, as the tubercle bacillus, in blood at rest, and still others only multiply rapidly in the lymph, as the micrococcus of erysipelas. Conveyed by blood or lymph the bacteria lodge in different organs and there start secondary changes, similar to those which have taken place at the primary seat of invasion—this is well illustrated in animals that have been inoculated with pure cultures of tubercle. In this connection three questions naturally present themselves:

1st. Are organisms present in all morbid processes?

2d. Can they originate *de novo*—and is there a mutability of the bacteria?

3d. And by far the most important question: Do microbes act as invariable and sole causes of disease? Or are they the result of pathological processes instituted in their absence?

In answer to the first question, *Are organisms present in all morbid processes?* it may be stated that it is to-day claimed that specific microörganisms have been demonstrated in the following diseases—splenic fever, relapsing fever, erysipelas, tuberculosis, cholera, pneumonia, malarial fevers, smallpox, scarlet fever, measles, diphtheria, typhoid and typhus fevers, pyæmia, leprosy, acute rheumatism, ulcerative endocarditis, pyelitis, gonorrhœa, acute atrophy of the liver, and in a number of skin diseases, as herpes, sycosis, etc. And it is claimed that our inability to discover them in other diseases is no proof of their absence, for their minute size, and peculiar reaction to staining agents, render their demonstration very difficult, and as yet we have no general method by which we are able to recognize the spores of these organisms, which are known to be more resistant than the microörganisms themselves. Again, our examinations may be made in the advanced stage of the disease processes, when all traces of bacteria may have disappeared, for it has been shown by experiments upon animals, that by the time that tissue changes occasioned by bacteria are complete, they themselves have disappeared—not until our technique is more perfect can we say positively that bacteria may not be found in all diseases, especially infectious and contagious ones.

In answer to the question, *Can bacteria originate de novo, and is there a mutability of the bacteria?* it may be stated that no reliable evidence has as yet been deduced to show that microbes can originate spontaneously. The experiments of Lister and Pasteur prove almost conclusively that it is impossible for them to originate spontaneously. Koch, from his culture experiments, concludes that one form of bacteria cannot change into another form, that micrococci can never become bacilli; nor can the innocuous varieties by any change in the conditions of their lives become noxious; although many observers, such as Nagel, Davine, and Buchues dispute this; still, at the present time, the weight of evidence is with Koch. There is no doubt that the properties possessed by different bacteria may be modified, increased, or diminished, by changes in their external conditions; at one time they are more infectious than at another, but never do they acquire attributes differing from those possessed by the variety to which they belong; even in bacteria there is a struggle for existence, the micrococci may be thrust aside by the bacilli.

Our third question is more difficult to answer than either of the others, viz., *Are microbes the cause or effects of disease?* If they can be proved to be the cause, then their presence is of the greatest importance; while, if they are only the effect, our interest in them from a medical standpoint ceases. What then is the precise significance of their coexistence with the diseased processes? The facts which seem to be established at the present time are as follows: Pasteur having proved by his vital theory that bacteria are the cause of all fermentation and putrefaction, students in, and believers of, the germ theory of disease, noticing the close relation these fermentative and putrefactive processes bear to communicable diseases, reasoned by analogy, that they likewise must be of bacterial origin. After carrying on a long series of experiments; such as inoculating animals with pure cultures of various species of bacteria, it was demonstrated that in some of the specific diseases bacteria are developed, and that the same microörganism is always present in the same disease, and that these organisms could be transferred from animal to animal without changing their characteristic form—their specific physiological action—and without the presence at any time of any other form of bacteria. Therefore it was inferred that not only are these diseases of bacterial origin, but that each disease is developed only from its own microorganism, recognizable under the microscope by their size and shape, their staining properties, peculiarities of growth in nutrient media; and, as has recently been demonstrated, by their chemical reaction; for example, during the past year Koch has shown that the Finkler bacillus, the comma bacillus of cholera nostras, which is considered by many as identical with his comma bacillus of Asiatic cholera, can be differentiated from it, not by its size and shape, but by its reaction to nitric acid; for by adding nitric acid to a growth of the cholera bacillus, a very characteristic red color is produced, while no reaction whatever is shown on the culture of the Finkler bacillus. Thus advances are being made every day, which lessen the elements of uncertainty. In this connection it must be noted that we do not as yet know why different animals behave so differently toward infectious agents, still less can we account for differences in their susceptibility, for an experimenter soon learns that there is a marked difference among the lower animals, as to the degree and manner in which they are affected by microbes. One form will flourish in one species and not in another; rats are unaffected by the anthrax bacillus, while mice readily succumb to their invasions. Even among animals of the same species, there is a marked difference of susceptibility to the infectious diseases, and most of the animals upon which experiments have been made are subject to but few of the diseases of man; the power of resisting inoculation is evidently far less in animals than in man; it is, therefore, reasoning from false premises to say that the action of microbes upon animals is the same as upon man.

While a reasonable conjecture may be reached regarding the bacterial origin of infectious diseases by our experiments upon animals, positive proof can be obtained only by studying the action of their microbes upon the human body. The only diseases in which a bacterial origin has been completely demonstrated in man, are

erysipelas, splenic and relapsing fever. The proof that the tubercle bacillus is the cause of tuberculosis, requires yet the crucial test of human inoculation. The explanation of the action of bacteria in disease, as given by Prof. Ziegler, seems to me the most comprehensive and satisfactory which has yet been given. He says: "The factors which determine the invasion and the course of the development of bacteria within the human body are two.

"1st. The bacteria must be endowed with certain vital properties of a special kind.

"2d. There must be a certain predisposition to favor their development on the part of the system." For example, one with no phthisical predisposition, either inherited or acquired, may live in an atmosphere laden with tubercle bacilli, and never develop phthisis, while one with strong phthisical predisposition, under the same conditions, furnishes a fit soil for the growth of the bacilli, and quickly succumbs to their invasion. This factor of predisposition is the important one in the problem. What it really consists in, is as yet undetermined; probably it is due to some alteration of the tissues, often we can see what this alteration is, such as a local wound, a disturbance of the circulation, etc., but in the majority of instances the anatomical basis of this change is an unknown quantity which is yet to be worked out. When found, then the cycle of proof will be complete; the simple demonstration of the presence of the tubercle bacilli in phthisical processes and in the sputum, is of great practical value in the early diagnosis of phthisis, but it does not determine the relationship that exists between the bacillus and the phthisical processes. We must not lose sight of the possibility, that it is only after the physico-chemical constituents of the tissues have been morbidly altered, by a yet unknown agent, that the conditions are such as to allow of the growth and colonization of the different pathogenic microbes. If in time it shall be conclusively proved that microbes alone, or microbes plus some, as yet, unknown quantity, are the cause of disease processes, we can readily appreciate the great importance of the knowledge which is to-day being gained by bacteriological studies, and we may hope in the near future to be able to discover the microbes of each disease, and to destroy them, or render them harmless, and so combat early the development of many diseases that at present we are unable to control.

I will now pass to the consideration of our next problem, viz.:

INOCULATION AS A MEANS OF MODIFYING OR PREVENTING DISEASE.

This problem has been strongly brought before the profession by Pasteur's recent experiments in hydrophobia. The protection afforded by vaccination, against smallpox, not only by granting immunity from the disease, but by modifying its severity when it is developed, brought first before the world the practical advantages of inoculation. The next great discovery in this direction was made by Pasteur, who found that by the prolonged culture of the anthrax bacillus at a temperature of 107.6° F. or 109.4° F., and with exposure to the oxygen of the air, the virulence of the organisms decreased. Animals inoculated with the attenuated virus developed only a mild type of splenic fever, and after recovery were found to be incapable of again developing the disease even when inoculated with virus of full strength. After repeated inoculations with attenuated virus, Pasteur found that inoculated sheep were quite unaffected by injections of a pure culture of the bacillus. A practical application of this discovery has since been made by agriculturists throughout Europe. Toussant, by cultivating the bacteria of chicken cholera, found that each successive generation was less virulent than the preceding, and that this attenuated virus when introduced into animals produced a severe local lesion with but slight constitutional disturbance, and that after recovery the inoculated animals were exempt from the infection for a year or more, after which time a second inoculation was necessary. More recently Koch has proved the immunity afforded by inoculation in another disease known as the septicæmia of mice. If a rabbit be inoculated with septicæmic blood, it will die within seventy hours, but if a weakened culture of the septicæmic bacteria be introduced into the tip of a rabbit's ear the animal will only suffer from the local effects of the virus, and afterward will not be affected by repeated inoculation of the strongest culture. Koch also showed that such immunity could not be conferred by inoculation with attenuated virus in all infectious diseases—for instance, relapsing fever can be produced again and again in the same animals after inoculations. Experimenters more recently, from these and other results obtained by inoculating animals with attenuated bacteria of different infectious diseases, have sought to furnish proof that similar inoculations in man would be followed by similar immunities.

The fact that individuals who have once passed through certain infectious diseases, or a mitigated form of them, are afterward not susceptible to the infection of these diseases, may be regarded as a strong evidence of the possibilities of such immunities being obtained by inoculation of the attenuated viruses of infectious diseases. While working in this line Pasteur brought forward the results of his inoculations against hydrophobia. Both his experiments and his results have aroused adverse criticism from those whose ignorance of the subject forbade any fair discussion of his methods or conclusions, as well as by those who presumably were competent to sit in judgment upon him; as a consequence the profession has been slow to accept his conclusions.

It would seem, however, that the report of the English Commission appointed by Parliament to investigate the subject, composed as it was of the best English observers, must at once put at rest all doubts. This report is all the more interesting and valuable because it is the first that has been made by impartial and competent authority upon Pasteur's work. The report of the Commission declares that it is certain that Pasteur has discovered a method of protection against hydrophobia comparable to that given by vaccination against smallpox; and in their opinion it is "difficult to overestimate the importance of the discovery," and that while not every case which he has treated has escaped, yet a large proportion of cases have been absolutely cured. The report of such a Commission will not only give to Pasteur's researches and experiments an authority which they have not before had, but it will also give an impetus to similar investigations in other directions, for a method of inoculation is presented by his experiments by which it may be possible to prevent other diseases in man. The diseases which up to the present time have been proven to be prevent-

able by inoculation, are vaccinia, variola, splenic fever, and if we regard the report of the English Commission conclusive, hydrophobia.

All the explanations that have been given of the immunity afforded by inoculation are unsatisfactory and at best only conjectural. It seems possible that a person who survives an infectious disease has in his struggle with it acquired the power of resisting such infection by some as yet unknown modification in the chemical constituents of his tissues, and that acquired immunity from inoculation is on the basis of the introduction of an infection in minute quantities until such a chemical change has been reached; but all such explanations are only suggestive, while it has been proven that inoculation is protection in a few diseases, it is reasonable to infer that those diseases in which one attack is protection against a second, that preventive inoculation is possible, and it opens a wide field for investigation and experimentation.

THE CAUSES OF ABNORMAL TEMPERATURE IN DISEASE,

is the third problem to which I invite attention. What is fever? is a question that still remains unanswered, and which is constantly pressing itself upon the clinical observer for solution. Few subjects have been more at the mercy of theorists, or been made more the sport of ingenious minds. In discussing it we are primarily led to a consideration of the animal heat of normal conditions. It is comparatively easy to reach reasonable and, indeed, demonstrable conclusions on the physiology of this subject up to a certain point. Beyond this we are confronted with difficulties which, with our present means, we are unable to solve with any approach to success or satisfaction. In regard to the causation of a certain amount of manifest energy, in the form of heat, as exhibited in the body of animals, there appears to be no reasonable objection to the view that conditions which result in the manifestation of such energy outside the body shall exhibit similar calorific effects within the tissues. It is well established that foods exhibit their heat potential in the changes incident to the production of water and carbon dioxide, and these demonstrations of chemical force are true combustions, and yield stored heat just as certainly as when like changes occur apart from the living tissues.

In the light of present physiology it appears almost self-evident that the prominent factor of heat production exists in metabolism, and that metabolic processes consist in the liberation of heat stored in the food introduced into the body. The inadequacy of these changes alone to account for the maintenance of an equable temperature of the body during the extraordinary and varying conditions of man's environment also seems apparent.

Very early in the investigation of this subject one becomes conscious of the imperative necessity for the existence of some regulating mechanism. I must, however, say just here, that I have never been able to convince myself, from analogy or otherwise, of the necessity for a nervous mechanism which shall give rise to heat-production without corresponding chemical changes either general or local. Such a theory to my mind calls for effects without a cause. I cannot, in other words, conceive of any reasonable evidence against the view that physical processes must be governed by the same laws and be productive of the same results, in every instance and under all conditions.

This brings us squarely to the question, Is the hyperpyrexia of fever an extraordinary manifestation of animal heat, governed and controlled always by the same mechanisms, differing only in degree? Or, are the conditions other than those of simple pyrexia, requiring special mechanisms for its development? In the study of the literature of this subject we find that increased calorific manifestation resulting from an exaggerated body metabolism was, for a long period, deemed a reasonable explanation of the temperature of fever. This view was based upon the fact that food and tissues represent a certain and definite potential, that in the metabolic processes this is exhibited as kinetic energy in the form of heat. Later these changes were found to be under certain nervous control, and special mechanisms were demonstrated as regulating metabolism without offering any objection to the combustion theory of animal heat and of fever as well; within a comparatively recent period the theory has been advanced that pyrexia results from a disturbance of the normal equilibrium between the production and dissipation of heat.

The views advanced by Maclagan and others on this subject are essentially as follows: 1st. That in the ordinary production of animal heat, the influence of the nervous system is neither essential nor exhibited, even though the pyrexia be considerable. 2d. That as soon as the disturbance induced by fever occurs, or the normal balance between heat production and heat dissipation is reached, nervous mechanisms are called into requisition and hyperpyrexia results. 3d. That the contagium of fever consumes the proteids designed for tissue repair.

It has been pretty conclusively shown by the experiments of Dr. Wood that an inhibitory control—a check—is in constant supervision over ordinary heat production, and he has located with more or less definiteness a cerebral heat centre, the normal inhibitory action of which is reflexly withdrawn in fever, and the resulting increased metabolism is exhibited in increased temperature. Dr. Wood has performed many carefully conducted experiments on animals in the settlement of the question: "Does fever consist in an increase of heat dissipation from the body or in an increased heat production?" It is difficult to understand just how the body can continue to dissipate heat for any prolonged period without a corresponding heat production.

Thus far experimental physiology has proved an efficient help in determining the mechanism of fever, but all attempts to isolate the spirit which primarily actuates these mechanisms have left us groping for an agency which we have thus far found too subtle for recognition.

What causes the peripheral stimulus which Dr. Ordt and others believe is carried to the spinal thermogenetic centres and there translated into influences which are transmitted to the tissues, to increase or diminish those transformations upon which depends the amount of heat produced? What is this morbific principle which so influences the cerebro-spinal centres of Brodie, Hitzig, Eulenburg, Landois, Wood, and others, as to inhibit their action on the heat reservoirs of the tissues by increasing chemical metamorphosis? Such questions as these force us back to the original proposition—What is fever? One must plainly see the futility of attempts to answer this question until some more satisfactory definition can be given, than that fever is an exhibition of phenomena or symptoms of which high temperature is the most prominent. Fever is a something which we have not yet

grasped; which produces those symptoms or *effects* which we have been accustomed to regard as its *cause*. Beyond this we actually know nothing, except that the result of its presence is manifested largely, at least, through the nervous apparatus; and knowing so little of its nature its causes must be speculative. What is destined to come out of the work in the direction in which the medical world is now active remains to be seen.

The establishment of a special nervous control over heat production will unquestionably remain an important and leading idea in the physiology of pyrexia at least. The disposition evinced by various observers to regard the febrile conditions as produced by a specific cause—one entirely distinct and apart from normal phenomena—has not as yet modified in any very essential degree the views entertained by clinicians of the earlier part of the present century. Unsatisfactory and incapable as the chemical theory is in accounting for certain temperature manifestations, it must remain the leading and influencing thought on this subject, until something essentially and radically different from that afforded by the results of present experimenters has been suggested.

We may sum up our knowledge on this subject as follows:

1. Chemical transformations produce definite results, whether occurring within the tissues or outside the body.

2. The body takes cognizance of the potential of food, and during certain changes, which are true combustions, a definite, unalterable value is exhibited as kinetic energy in the form of heat.

3. Muscular action is an insignificant factor in the establishment of animal heat, excepting as it excites metabolic energy.

4. The varying circumstances of man's environment necessitate some heat-regulating mechanism to preserve the conditions of homogenesis.

5. The evidence of the existence of a regulating mechanism operating independently of chemical change is insufficient.

6. There appears to be no reason for regarding the increased heat-production of fever as requiring mechanisms other than those acting in normal rise of temperature.

7. While anatomical difficulties interfere with the complete isolation of such ganglia, the existence of two cerebral inhibiting heat mechanisms has been fairly established; as much may be said of like spinal ganglia.

8. The production of heat in fever is in exact consonance with metabolism and the chemical changes are under the control of the heat mechanisms through the connection between the nervous and the vascular apparatus.

9. In the present state of our knowledge we can only theorize as to the identity of the material in the circulating media of the body, which institutes the primary irritation in febrile conditions. That it is inconstant in composition or nature, there is abundant reason for believing. That it is microbic in every instance, I am unprepared to admit. We certainly must have a clearer idea of what fever is before we accept or seek to explore the action of poisons or microbes in producing it. We are too prone to seek for the causes of phenomena before we have determined the precise nature of the phenomena themselves. It is evident that the bacterial pathology which is dominating all the teachings and investigations of the present day, has as yet, given us no clew to an explanation of the causes and phenomena of fever.

The length of time already occupied in this discussion will compel me to be brief in my consideration of our last problem, viz.:

THE EFFECTS OF ANTIPYRETICS IN THE TREATMENT OF DISEASE.

During the last decade, since the thermometer has become a part of the physician's "armamentarium," antipyretics have taken a more prominent place in the treatment of disease than ever before, probably for the reason that by it we are able more readily and accurately to determine their effects upon the body temperature. If we accept the view that high temperatures cause destructive metamorphosis of tissue, a view which in some unaccountable way has gained almost universal acceptance—the importance of reducing high body temperatures in all diseases cannot be overestimated, and we are justified in resorting to the most powerful antipyretic agents to accomplish it. But there is very little, if any, evidence that febrile temperatures of 106° or 107° cause any serious injury to the body; certainly that no such dangerous destructive changes take place in the blood and solid organs as we have been led to suppose from the writings of continental observers. I can find no clinical or experimental evidence to sustain the popular doctrine of Liebermeister and others, that the grave symptoms in fever, the symptoms which usually render a prognosis unfavorable, are referable to a high temperature range. In fact, the evidence of the so-called parenchymatous changes and of the grave febrile symptoms in acute infectious diseases, are as well marked and as often present in cases where the temperature-range at no time reaches 103°, as in those cases which are attended by very high temperatures. In a series of cases of typhoid fever of low temperature, often subnormal, which have come under my observation during the past year, in which the ratio of *mortality* was unusually high, I was surprised at the development of so many of those very grave symptoms which I have been accustomed to regard as due to the effects of high ranges of temperature; from these, and similar observations in other acute diseases, I have come to the opinion that there is no necessary relationship between the other febrile symptoms and the temperature range.

It is evident that we have passed through the period of enthusiasm in the antipyretic treatment of disease, and already prominent workers have come seriously to consider whether the dangers of hyperpyrexia have not been over-estimated, and the question is being asked, May not the high temperature in disease, especially in infectious diseases, be a conservative process. From statements already made, it is evident that elevation of temperature is far from being all that there is to fever.

A pertinent question for every practitioner of medicine to put to himself is, How much has he accomplished by the use of antipyretics, in the arrest and safer conduct of disease, and are there no dangers attending their employment? Whatever answer may be given to these questions, I am convinced that the heroic use of antipyretic measures which within the past few years has come into such general use—the one idea of the modern therapeutist being to reduce temperature at all hazards—has a side of danger that should not be lost sight of. If the temperature range in a case of fever or pneumonia is about

105° or 106°, and can readily be reduced by mild antipyretic measures, the condition of the patient at the same time being made more comfortable by their use, I should most certainly recommend their employment. But when powerful antipyretic measures are required to effect temperature reduction, and its reduction is only temporary, I question very much their beneficial effects; in fact, I am quite confident that such reductions are obtained only by an expenditure of vital force on the part of the patient, which largely diminishes his chances of ultimate recovery, especially if the hyperpyrexia has been long continued, for I have frequently noticed that their daily employment, for a prolonged period, has been followed by grave nervous phenomena, and the evidence of the most extreme cardiac failure, greater than could have been caused by the high temperature alone. I think no one whose experience is at all extensive in the use of antipyretics in the treatment of acute infectious diseases, will for a moment claim that they have any power in shortening their duration or greatly modifying their severity.

Time will not allow me to enter into a detailed account of the different antipyretics now in use, to compare their relative merits, nor to theorize as to their mode of action. In a general way they may be divided into two classes, the application of cold to the surface and the internal administration of antipyretic drugs. The mode of action of the two classes is evidently not the same, although they both may effect the reduction of temperature. Whether they act by diminishing heat production, or by increasing heat dissipation, is still undetermined; for every day's experience teaches that sometimes when antipyretic drugs act badly or inefficiently, cold applied to the surface in the form of baths or packs, often accomplishes the desired results in the most satisfactory way, and *vice versâ*. It has seemed to me that the beneficial action of antipyrin and antifebrin is not so much due to their power of controlling temperature, as to their tranquillizing effects upon the nervous system. Dr. Wood, from his experiments on animals, concludes that antipyrin diminishes heat production and heat dissipation, and that its action on the bodily heat is entirely independent of any influence on the circulation; that it probably acts through the nervous system directly upon the chemical movements of the organism.

Clinical experience has taught me that opium is often one of our most efficient and reliable antipyretics. The old custom of administering Dover's powder in small doses, at stated intervals, throughout the course of a typhoid fever, undoubtedly had its origin in the power of opium to control temperature by its tranquillizing effects upon the nervous system, as all discussions in this line must at present be theoretical and unsatisfactory. I close the consideration of this problem, with the practical question: If temperature reduction does not shorten the duration, mitigate the severity, or avert serious complication in disease; and if the ratio of mortality is not so diminished as to encourage us that we are making advances by antipyretic measures, on *what basis are we justified in their use?* Evidently, only on the basis that by their use we relieve one of the many phenomena of fever. If this can be accomplished without serious loss of vitality, or at the expense of the reserve force of the patient, we are justified in their use; but do not let us imagine that by reducing temperature we are controlling fever.

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In review of the subjects which I have brought to your notice this evening, it is evident that the work of to-day is gradually rescuing medicine from the realm of wilful and unreasonable speculation, and is establishing it on a basis of new facts. Yet I would warn those who are in haste to elevate the experimental above the practical, that the experimental will never alone be able to accomplish the great work that is ever before the practical physician. We cannot safely forsake the rich storehouse of clinical observations that have been gathered by so many master minds, and withdraw into the recesses of the laboratory; for, although in the work of the laboratory we hope to find the solution of many of the problems with which we are now struggling, it must be remembered that the special field of medical investigation is, and ever will be, the study of disease in its activities. Experimental work, even in the study of the causes of disease, must always be onesided, the whole number of its causes can only be studied and understood at the bedside of the patient. The great treasures of clinical observations must ever be the basis of true medical advancement. It is here that medicine is to find her firm and enduring foundations. Let us then labor without rest, in the laboratory, at the bedside, and in the deadhouse, for the solution of the great and vital problems that are before us in every branch of our science, and the full benefit of our labors later generations will come to know and enjoy.

ORIGINAL ARTICLES.

SÄNGER-CÆSAREAN OPERATION NECESSITATED BY A PECULIAR CAUSE AND ACCOMPANIED BY UNUSUAL COMPLICATIONS.

BY R. B. NORMENT, M.D.,
OF HAMPDEN, MD.

ON the 16th of December, 1887, I was called to see S. C. M., aged twenty-six, white, unmarried, who was at that time eight months pregnant. She was troubled with violent headache and a hacking cough, on account of the former of which, she consulted me. The patient was a small hump-backed woman, who had been afflicted with Pott's disease of the spine since early childhood; and she told me that she still had many sores on her back. The deformity of the patient presented itself to my mind as rather remarkable, in that when she was standing, the ensiform cartilage and pubes were nearly on a level.

A careful examination made on the 18th revealed the following facts: Patient is 49 inches high, and very thin; there is marked kyphosis the result of Pott's disease, involving the entire dorsal region (indeed it seems to me that the entire spinal column below the vertebra prominens is involved); the lower ribs are in the upper pelvis; the uterus hangs pendulous over the pubes; the symphysis lies a little posterior to the femurs when the patient is standing; the vulvar opening looks slightly backward; there is marked contraction at the lower strait, the distance between coccyx and pubes being about two inches, but I fail to discover any contraction in the upper strait; the ensiform cartilage is much too near the pubes, the distance between the two being estimated at 6 to 6½ inches (in reality it was something less;

measurement after delivery showing it to be but 5¾ inches).

These facts led me to fear that I would have great and serious difficulty in delivering my patient when the time of her labor had arrived. The position of the uterus was what presented itself to my mind as the greatest difficulty I would be called upon to combat, hanging pendulous when the woman was standing, the fundus uteri being in a plane eight and a half inches below the tip of the coccyx, lying between her thighs when she assumed the recumbent posture. There was no room to lift up this anteverted uterus, for the sternum was far anterior to the pubes; the patient being in a recumbent position, a line drawn from the pubes to the sternum would have made an angle of about fifty degrees with the horizontal plane.

The case presented itself to me in this light: In order to accomplish delivery *per vias naturales*, it will be necessary to make the entire body of the fœtus describe an arc of a circle equal to 270 degrees or thereabout. As there was contraction at the inferior strait sufficient in my judgment to necessitate perforation or crushing of the fœtal head, I thought the hope of accomplishing this would be infinitely small.

After deliberating over the matter for a day or two, during which time the patient was being treated for her headache and cough, I concluded that it would be best to prepare the patient and her family for the Cæsarean operation.

The general condition of the patient was about as bad as could well be imagined. In addition to the great deformity above mentioned, I found the lower extremities œdematous from the toes to the hips; the urine highly albuminous, and containing *hyaline* and *fatty* casts in large numbers. There were two open suppurating sinuses in the lumbar region, one just below the anterior superior spinous process of the left ilium, and one in the anterior surface of the right thigh about six inches below the hip-joint. The patient could not say just how long *these* had been discharging, but there had not been a time during a space of more than twenty years when she was free from the discharge of pus from a sinus *somewhere*.

There was one very curious circumstance noticed at the examination. When the finger was passed into the vagina, it seemed that in whatever way it was directed it came in contact with a bowel filled with feces. I am of the opinion that the sigmoid flexure of the colon was in the pelvis. The patient was ordered free purgation with salines, as well as frequent enemata. For medicine she took iron, quinine, and bromides in various combinations. By these measures she was rendered more comfortable for about twenty days, when symptoms of uræmia set in, headache, dizziness, blindness, tremor, and nervous twitchings and great restlessness during sleep; limbs more œdematous than ever; urine scanty, albumen and casts abundant. Eclampsia seemed imminent. She was ordered large doses of pulv. jalap comp. (℈j every three hours) until violent purgation ensued. Potassium bromide was freely administered, and patient kept for a few days upon a liquid diet. When she had been very freely purged the symptoms ameliorated to a marked degree, and I ordered tinct. ferri. et ammon. acetat. ʒj every three hours, and potass. brom. ℈j at bedtime and as often during the day as might be required in order to keep her headache in abeyance. Her condition again improved.

In the meantime all things were prepared for the operation whenever emergency might demand. The family and patient were plainly told the seriousness of the situation as well as the dangers of operative procedure. To the former no hope of the patient's recovery was held out. I did not, however, deem it wise to tell the patient that I thought it absolutely impossible for her to recover, though I plainly made known to her the *danger* she was called upon to encounter. The patient and her family readily gave their consent to any operation which might be deemed advisable.

I visited my patient daily from the time I was first called to the time of operation. At my visit, January 12, I was informed that she had had some pain simulating that of labor during the previous night, but there had been no return of the same for twelve hours. There was no further return of pain during that day or the following night, but at four P. M. on the 13th, regular dilating pain set in. Having lasted for upward of two hours, I was sent for, and found the cervix slightly dilated and soft; the patient, however, was suffering little pain. I was informed that her pains had been regular and frequent, "real down hard pain," until she was told that I was coming, when she became nervous, and the pains ceased for some time.

In consideration of the fact that the patient was very weak, that she had already suffered pain for three hours, that, should her labor occur later in the night, the difficulty of securing assistants would be greatly increased, I determined to operate as soon as assistants could be procured, and the patient prepared for the operation.

The pubes were shaved, the abdomen washed thoroughly with soap and water, and covered with a towel, wet with a solution of hydrarg. bichlor., 1 : 2000. The sinus under the iliac spine was washed out with the bichloride solution, and plugged with absorbent cotton, and a fold of linen wrung from the bichloride was placed in the groin; that in the thigh was treated in the same manner, except that it was covered with a piece of India-rubber plaster. The bladder and rectum were emptied, and the vagina washed out with a two per cent. solution of carbolic acid.

After this preparation, I proceeded with the operation in the presence and with the assistance of Drs. Williams, Mitchell, and Smith, of Hampden,

and Prof. Tiffany, of Baltimore. To the last named I feel myself peculiarly indebted, not only for the honor of his presence, but also for his able counsel and assistance during the entire case.

The operation determined upon was that of Sänger. The only circumstances worthy of special note were the behavior of the uterine tumor and the fact that the incision into the uterus was directly on the placenta. The uterus, by its own weight, protruded through the abdominal incision, and lay on a disinfected towel between the patient's thighs. The membranes were still intact; and instead of following the advice of Sänger and others to rupture them at this stage of the operation *per vaginam*, I followed that of Charpentier, and left them intact to the last moment. I was led to do this not on account of any advantage to be derived from such a course in an ordinary case, but from the fact that I would have had to turn my patient on her side in order to reach the membranes *per vaginam*.

It was difficult to raise the uterus enough to incise conveniently the anterior wall; but believing in the advantage of this position for the incision after the completion of the operation, I determined to make it nowhere else. I was unable to discern the position of the placenta, and the incision was immediately over it. I think the unruptured state of the membranes at this time was an exceedingly fortuitous circumstance; for the cavity of the uterus being full, when the organ was incised, instead of contracting on the placenta, as the lips of the wound retracted, the placental attachments were broken up to a large extent. The placenta was quickly separated from the left side of the incision, the membranes ruptured, and the child seized by the feet.

The child was extracted in an asphyxiated condition, the heart, however, was still beating. While Dr. Williams held the rubber cord controlling hemorrhage from the uterus, and I was emptying that organ of the secundines, and by massage bringing about firm contraction, Drs. Tiffany and Smith succeeded in resuscitating the child.

The uterine wound was closed with two rows of stitches, the peritoneal layer with the continuous suture, and the muscularis with interrupted sutures—fourteen in number. The material used for suturing was carbolized silk. The uterus, firmly contracted and free from any leakage, was returned to the abdominal cavity,and the abdominal incision closed.

I cannot state the exact time of operation, but two hours and a quarter were consumed between the placing of the patient on the table, and her return to her bed, with the wounds fully dressed, and her body cleansed. About twenty minutes of this time were taken up prior to delivery, the administration of the anæsthetic consuming part of this. Chloroform was used as the anæsthetic on account of the cough, ether, from its well-known irritant effects, being deemed inadvisable.

The patient was placed in bed, surrounded with bottles of hot water, and a few minims of Squibb's fluid extract of ergot, along with some whiskey, were administered hypodermatically. After complete recovery from the anæsthetic, small doses of tinct. opii deod. and fluid extract of ergot were ordered. Reaction was fair, and the patient was allowed milk in moderate amount.

Twelve hours after the operation, patient was conscious, cheerful, comparatively free from pain; pulse 104 and feeble, temperature normal, lochial discharge normal in amount and appearance. There was one really bad symptom at this time, viz., the secretion of urine was very scanty, the catheter drawing but two ounces.

During the next twelve hours she excreted about the same amount, and despite stimulation the heart's action became more feeble, temperature 99⅕° F.

From this time on the patient steadily declined, the symptoms of uræmia predominating. Death occurred on the 16th at 2.30 P. M., sixty-two hours after the operation. There was no vomiting, no hiccough, no abdominal distention, no febrile movement, her temperature never having risen above 99⅕° F. Increasing œdema, increasing feebleness of pulse, increasing coma, were all that I could see. It is needless to report the treatment of this condition; purgation with stimulation and fluid nourishment were given a fair trial, but to no avail.

Was this operation a success or a failure? For my own part, although under the circumstances my opinion may be somewhat biassed, I would class it among the successful, rather than the unsuccessful, precedures of obstetrics. My opinion before the operation, was, that it afforded the only means of emptying the uterus, ante-mortem; and I think, had any one else entertained a contrary opinion, he would have changed his mind had he seen the condition of affairs when the abdomen was opened. This cavity, of course, was not kept open long enough to note the position of the abdominal organs, but it was noticed that the ligature around the lower portion of the uterine cone was, while *in situ, in contact with the liver*. I had never expected to save the mother, but operated early in order to give her the advantage of any slender hope of recovery which might remain. The child was delivered alive, and still lives—one human life was saved by means of the operation. The history of the case, following the operation, would lead me to hope for better things in a subject reasonably healthy, although seriously deformed.

Here I would like to add my humble opinion as to the place the Cæsarean operation, or one of its substitutes, should hold in the practice of midwifery. It is beyond the province of an article like this to enter into any extended discussion of this important question, and to be brief, I will merely formulate my ideas.

I believe the verdict of the near future will be, that when there is such disparity in size between the maternal pelvis and fœtal head, that the latter cannot engage in the upper strait, the Cæsarean operation is indicated; and that whenever the true conjugate is less than two and a half inches, in ordinary hands,

Cæsarean section is safer than craniotomy or cephalotripsy. Barnes and Jaggard may affirm that in the latter operations the maternal danger is practically *nil*, but the writings of other authorities just as reliable as they, fail to confirm such a statement. Verrier affirms that even Pajot has not succeeded in saving life when the conjugate was under two inches, and Charpentier speaks of thirty-seven maternal deaths in 119 cases (the minimum conjugate being 2.7 inches), as "fairly satisfactory results," from the use of the cephalotribe.

I can never feel that operative interference, which takes into account the interests of the child as well as those of the mother, is to be lightly considered from a moral standpoint, and for one, I will never *willingly* apply a destructive instrument, of any sort, to the head of a *living* child, free above the pelvic brim, and it seems to me that no words could express the consternation and chagrin of one, who was compelled to resort to the Cæsarean operation, after failure of one or other of the destructive operations.

As to the time of operation, common sense, as well as sound surgical judgment, and clinical experience, teach that if the operation is to be performed at all, it should be done before the mother has been exhausted by a protracted labor.

THE TREATMENT OF THORACIC ANEURISM BY IODIDE OF POTASSIUM.

BY O. T. SCHULTZ, M.D.,
OF VERNON, IND.

IN connection with the very valuable paper on the "Treatment of Thoracic Aneurism by Iodide of Potassium," by Prof. Macdonald, in THE MEDICAL NEWS of January 7, the following report of a case of aneurism of the root of the aorta may be of interest, in which the treatment by iodide of potassium procured relief of all the distressing subjective symptoms, and a great improvement in the objective signs for a number of months, and when the treatment was stopped through ignorance and carelessness of the patient, and hard work was continuously engaged in, a new pointing of the aneurism externally occurred, and finally rupture into the right lung and death, while the post-mortem showed what immense amount of repair had being going on, and in what it consisted.

On April 28, 1887, a negro man, probably fifty years of age, presented me a card from Dr. Ramsey, of this city, which informed me that this was an interesting case, and would well repay the trouble of an examination. The patient, a strongly built man, was much emaciated, walked with a tottering, halting step which scarcely left the ground, and seemed much worn out by the short walk from Dr. Ramsey's office, his face expressed great and long continued suffering. He stated that about six years ago he had been for a long time troubled with pain in his joints and limbs. The joints had swelled, first one and then the other, and he had also had some fever at the time. Since then he had dull, sore pain in his right chest, and especially under the sternum, severe enough at times to compel him to take to bed. He had also been having more or less cough, and at times dyspnœic seizures, especially at night. About four months ago a tumor first appeared upon his outer chest wall. For some time past the symptoms had been so troublesome that he had to give up all work and seek medical advice. He further stated that he was under Dr. Ramsey's care, and that he was fast improving, his cough almost gone, his pain much less, no more dyspnœic attacks, his strength was increasing, and that he ate and slept well.

The pulse at the wrists was too indistinct to count. The heart's action was regular, equal, weak, 96–100. The apex beat was in the fifth space, a little internal to the nipple line; the impulse was weak but distinct. The thoracic wall presented no discoloration or enlarged veins. Over the middle of the sternum in the region of the third and fourth cartilages and spaces, there was a tumor the size of a small orange, with a rounded base and a sharply projecting apex. Toward the right of this base the thoracic wall was markedly bulged out. Well-marked pulsation could be seen in the bulging to the right of the sternum, and could be felt, but not seen, in the tumor over the sternum. The sternal tumor was round, about two inches in diameter at base; the bony walls arched up and left an open central spot one inch in diameter with well-marked bony margins, through which projected the pointed apex, which was very soft, and its coverings seemed greatly attenuated. The heart sounds over the apex, over the pulmonary orifice, and over the tricuspid valve below the sternal tumor, were weak but distinct. The heart's action was equal, regular, somewhat accelerated; the rhythm was normal. Over the aortic orifice the sounds were loud, four to five times as loud as over the pulmonary artery; a powerful impulse was present, and a distinct systolic but no diastolic murmur; the murmur was with the first sound, and almost replacing this; the second sound was loud, clear, and distinct; the intervals also were free from any sound or murmur. Pulsation over tumor was synchronous with that of the heart, and stronger to the right of than under the sternum. A systolic murmur was present over the tumor, but whether this was propagated from the aortic orifice, or whether it originated in the tumor, cannot be made out. There was absolute dulness for a hand's breadth to the right of the sternum, over the site of the bulging. The heart's limits seemed normal, except to the right, where the cardiac merged into the tumor dulness.

I diagnosticated thoracic aneurism, and judged the seat of the same to be either the root of the aorta, or the right auricle of the heart. I ventured to recommend to Dr. Ramsey that the patient be put and kept on large doses of potassium iodide, and gave it as my opinion that the patient was probably syphilitic. Dr. Ramsey agreed with me in this opinion, and told me that his patient was now taking five grains of the iodide four times a day, and that

he thought the very manifest improvement must be attributed to this agent.

Sept. 4. Dr. Ramsey invited me to see this case with him. He informed me that the negro had taken the potassium iodide for several months, that he had improved during this time, in every respect, that the sternal tumor had disappeared and the defect in the bone had filled up. In fact, he had considered himself well, had ceased reporting himself, had stopped the medicine, and had been engaged all summer in heavy manual labor, that even yesterday he had seen him raising dirt from out of a deep ditch. Early this morning while still in bed a violent hæmatemesis had taken place, by which he lost three pints of blood. This hemorrhage had ceased spontaneously. We saw the patient at 5 P.M., and found him in a partial stupor, the pupils were normal, the pulse was hard and synchronous at both wrists. Pulsation was much stronger in the right supraclavicular space than in the left. He had no pain, only slight cough and felt comfortable. The sternal tumor had disappeared. The lateral prominence had spread upward and to the right, its highest point being in the upper part of the right thoracic wall, where the second rib had been absorbed. A violent hemorrhage recurred shortly after our visit, in which the patient died.

Post-mortem.—Present, Drs. Powell, Pearse, Ramsey, and Schultz, all of Mt. Vernon. Cadaveric rigidity well marked, body was well nourished, good panniculus adiposus. The contours of left thorax were normal. On the right side the thoracic wall was considerably bulged out, the prominence beginning two inches from the right margin of the sternum and extending four inches transversely, and beginning two and one-half inches below the clavicle, and extending six and one-half inches directly downward. The bulging was considerable, at least one inch in height, and attained its maximum at its upper outer part, external to the nipple line, where it made a sharp boss two inches in diameter and two inches high, and where it had eaten through the rib. Great difficulty was experienced in removing the sternum and cartilages, owing to the very firm and very extensive adhesions on their outer surface. The former defect in the sternum was marked on its anterior surface by a slight depression of normal color with the balance of this bone, and on its posterior surface by a rough, dark-red spot the size of a silver half-dollar. We found that with the sternum and cartilages we had also removed a large part of the anterior wall of the tumor. This tumor occupied the entire front of the upper half of the right thorax and passed over to the left to become continuous with the base of the heart. It was firmly adherent in front to the wall of the thorax, free at its lower and lower posterior part, and so firmly attached at its upper and upper posterior part with the pleura and lung, that it had to be cut out from its neighboring organ, and removed with portions of the lung and ribs attached. It had broken into the right lung at its upper part and the lung tissue was filled with clotted blood. The left lung was not adherent to the tumor. The apex and body of the heart were easily stripped of their covering, but at its base the tumor formed one continuous mass with the heart, and here the pericardium seemed to enter into the formation of the wall of the tumor. The lower half of the tumor was filled with a mass of fibrin of a light-red color, disposed in layers of unequal thickness. This mass was nearly two inches in thickness, and could readily be peeled off from the tumor wall, and then presented at its lower surface the outline of the tumor; its upper concave surface with the upper walls of the tumor had formed the present cavity of the latter which held about one pint and was filled with loose recent clot. The lower walls of the tumor were very thick, dense, and non-adherent, the upper walls were thin, broke down easily and were firmly adherent to the surrounding organs.

The heart was normal in size, form, and consistency, its chambers were of normal size and shape. The valves were normal, except the aortic semilunar, which were slightly thickened, very few and small calcareous granules were present upon these valves and at this orifice, these valves seemed slightly incompetent. Just above the valves the right side of the aortic wall presented a large hole which opened into the aneurismal sac. The root of the aorta and its remaining sinuses seemed to be somewhat dilated, but above the sinuses the calibre of the vessel was not increased. The opening occupied the place of the right posterior sinus of Valsalva, being removed not much more than one-quarter of an inch from the orifice of the coronary artery. It was in the shape of an irregular square and measured three quarters of an inch in breadth and three-eighths of an inch in height. Its boundaries were: the lower, the base of the heart, an almost straight line, the two lateral, the walls of the aorta, also straight lines, the upper, also the aortic walls, irregularly convex. The floor of the opening was smooth, presenting a shining, polished appearance, the walls of the aorta as they constituted the lateral and upper margin of the opening were smooth, well rounded, shining, and showed no signs of ulceration. The upper wall of the aneurismal sac was attached to the aorta, more than an inch above the opening in this vessel, and hence the aortic wall here hung as a screen between the cavities of the aneurism and of the aorta. This portion of the wall of the aorta was also free from disease as far as could be judged by sight and touch. The other vessels of the heart and their orifices were normal.

From a study of this very instructive case we draw the following conclusions: The treatment by potassium iodide had very rapidly relieved the patient of great suffering, and had restored him to a relatively healthy condition; it had stopped the onward progress of the disease; it had prevented rupture through the sternum which at one time was imminent; by the amount of reparative work done in the older part of the tumor, this had been forced into a new direction, when it again began to grow; by a steady continuance of the treatment, by careful diet and rigid abstinence from work and exertion of any kind life might have been preserved a much longer time and the inevitable termination postponed much longer.

ICHTHYOL IN SURGERY.[1]

BY EDWARD MARTIN, M.D.,
OF PHILADELPHIA.

ICHTHYOL was first described by Schrötter, and used in the treatment of skin diseases by Unna. It is obtained as a clear yellow-brown oil, by distilling bituminous matter found in Tyrol, and containing the fossilized remains of fishes and marine animals. By the action of sulphuric acid on this distillate, and subsequent neutralization with soda or ammonia, either the sodium or ammonium sulphichthyolate is produced. The latter compound is preferred by Unna.

The ammonium sulphichthyolate is a reddish-brown, clear, syrup-like liquid, of burning taste and odor, soluble in water, making a clear red-brown solution; also soluble in equal parts of alcohol and ether.

The ichthyol preparations are characterized chemically by their richness in sulphur (ten per cent.), so intimately united that it can only be extracted by complete decomposition (Lartigeau); they easily take up oxygen, acting as powerful reducing agents (Baumann).

Clinically, the ichthyolates are described by Unna as being powerful antiphlogistics, causing anæmia and rapid subsidence of swelling in all tissues. This antiphlogistic effect is ascribed to the drug's action on the endothelium of the bloodvessels, depriving it of oxygen by virtue of its reducing properties, and contracting the lumen of the vessels. This explanation is not, perhaps, entirely satisfactory, but physiological studies have not yet given us a better one. The cornifying effect of the drug on the epithelium of the rete is undoubted.

Surgically, what are the indications for the drug? Lartigeau states that it is indicated in all subcutaneous and inflammatory tumefactions, œdemas, vascular dilatations, incipient furuncles, and local manifestations of rheumatism. Elliot praises it highly in burns of the first and second degree (five per cent. solutions in water), as producing rapid subsidence of pain and inflammatory symptoms. He finds its application to obstinate varicose ulcers associated with eczema rubrum (sodium compounds, three to five per cent.) at times productive of marvellous results. In his hands it is also useful in cicatrices, and in a few cases of rheumatism and neuralgia has given immediate and marked relief from pain. Schweninger states that in rheumatism, lumbago, ischias, tic, gout, and migraine, local applications of ichthyol act more powerfully in allaying pain than any known medication.

Lorenz is astonished at the fabulous efficacy of the drug. In acute and chronic joint rheumatism, acute muscular rheumatism, mastitis, panaritis, and contusions, a few rubbings with pure or fifty per cent. ichthyol compounds are peculiarly successful in allaying pain and hastening healing. In chronic and acute joint rheumatism relief often follows a single rubbing, while this is the rule in acute muscular rheumatism. The pain of gout disappears, the shining red skin becoming quickly wrinkled. A beginning mastitis or panaritis is always aborted, or if fully developed the pain is much relieved. Its prompt use prevents the discoloration following contusions. It immediately allays the pain of a burn, and prevents blistering. Finally, a ten per cent. solution hastens the cicatrization of badly healing ulcers.

Loring dilutes with water when the pure ichthyol compound cannot be borne and prevents irritation of the skin by careful washing and drying before each application.

Von Nussbaum states that a single application of ichthyol one part, water four parts, lanolin five parts, has allayed the itching of eczematous ulcers which had resisted all known applications for weeks and months, and promptly brought about rapid cicatrization on being continued a few days. Arthritic pains, which for weeks have made day and night miserable, are relieved at times in one-half minute after the application of a strong ichthyol ointment. In erysipelas it produces results obtainable by no other means, namely, the immediate arrest of the disease.

Von Nussbaum's treatment was first the thorough disinfection and drainage of the wound, then, if the disease continued to extend, over its whole surface a thick layer of ichthyolate and vaseline, equal parts, was spread and covered by a layer of ten per cent. salicylated cotton. The erysipelas advanced not a line further and in a single day the swelling disappeared, and the red, shining, puffy surface became yellow, brown, and wrinkled. This remarkable effect von Nussbaum ascribes not to the influence of the drug on Fehleisen's cocci, but rather to a change produced in the tissues by virtue of which they cease to favor the growth of the microörganisms.

Stelwagon has had excellent results in the abortion of furuncles by ichthyol preparations. D. Hayes Agnew considers the ichthyol preparations more powerful than any known therapeutical agent in bringing about reduction of inflammatory enlargements, and has had particularly good results in recently enlarged lymphatics. He uses sulphichthyolate of ammonia and iodide of lead, equal parts, applied generously and covered in by oiled silk.

The writer has used ichthyol in:

(1) Six cases of cervical adenitis, with absolutely no relief; cure being subsequently brought about by iodine or the knife.

(2) Fifteen cases of marked inflammatory induration of the subcutaneous tissues, with invariably a

[1] Read before the Philadelphia County Medical Society, January 25, 1888.

speedy, and in some cases, almost magical reduction, and this after other means had been tried unsuccessfully.

(3) In two cases of furuncles without good effect.

(4) In one case of cellulitis without marked effect till the knife was used (in this case staphylococci were found, but no chains).

(5) In four cases where pain was the most marked feature of inflammation, with complete relief in three, and no effect in the fourth.

(6) In one case of erysipelas of the scalp, with immediate cure.

The latter is so striking, that it is reported in full.

B. C., bartender, æt. thirty-six; Irishman. Struck on the head by a bottle whilst intoxicated, December 20, 1887. Two slight wounds of the scalp, to which no dressing was applied. 22d. Chill, fever, nausea, great pain in the head, and swelling. Went to a clinic; wounds were opened, disinfected, and catgut drainage provided; symptoms progressive. He was seen by the writer on the second day of his fever, the fourth from the infliction of the wound. No sleep for two nights. Pulse 106; temperature 103°. Violent headache; whole scalp puffy, œdematous, and very tender; a few drops of thin pus squeezed from wounds. Cover-glass preparations of blood from puncture by tenotome showed Fehleisen's chains. A saline purge and iron were ordered internally. On the scalp was placed a thick layer of ammonium ichthyolate and vaseline, equal parts. The pain was relieved almost immediately; the patient slept comfortably; his temperature the following morning was 98°, and he was and remained well.

This is not different from the results obtained by Nussbaum.

With the exception of the case of erysipelas, the writer used a ten per cent. ointment of ammonium ichthyolate in lanolin, fearing lest, in the case of stronger applications, his effects might be ascribed to counter-irritation. It is possible that stronger preparations would have proven efficacious in the treatment of adenitis in which the weak ointment signally failed.

The extravagant praises bestowed by some authors on ichthyol savor more of proprietary advertisements than scientific contributions, and the variety of affections for which it is recommended might well make one doubtful as to its complete efficacy in any single instance.

An analysis of the cases in which it has proven serviceable will show, however, that they can be relegated to one of two classes:

1. Affections characterized by inflammatory enlargement.

2. Affections characterized by pain of peripheral origin, probably depending on inflammation or congestion.

For either of these conditions, theoretically, a powerful antiphlogistic would be indicated, so that the clinical indications for the use of the drug correspond to its alleged therapeutic effect.

When the surface is irritated, weak solutions (three to five per cent.) should be used; but when the skin is intact and the subcutaneous tissues are to be affected, pure or one-half strength ointments give the best results. In using strong preparations the skin should be washed with soap and warm water, and thoroughly dried before each application. Ichthyolates can be combined with any of the ointments, or can be dissolved in water.

The writer's success with the drug, even where it was not used in the most efficient manner, has convinced him that the praise bestowed on it by the Germans is well merited. Where suppuration has actually taken place the weak ointment is not of service, but in the allaying of inflammatory pain and the resolution of subcutaneous induration (excepting adenitis) the results are most satisfactory.

MEDICAL PROGRESS.

Laryngeal Perichondritis.—At a recent meeting of the "Wiener Medizinisches Doctorencollegium," PROFESSOR SCHNITZLER showed a very interesting case of laryngeal perichondritis of a doubtful character, which was completely cured by the use of iodide of potassium. The case was especially interesting from a diagnostic, as well as therapeutic, point. The patient, an apothecary, thirty years old, fell ill about a year ago with a cough, hoarseness, pains in the throat, and disturbances of swallowing. He was for a long time treated as an out-door patient at a certain clinic, but the diagnosis made there could not be found out. The patient stated that his larynx had first been treated with glycerine of iodine, and later on with the nitrate of silver. When admitted into the Polyclinic of Vienna considerable swelling of the whole laryngeal mucous membrane was found on examination; the epiglottis was particularly much reddened and thickened, and on both sides of it there were ulcerations, which extended over the "plicæ aryepiglotticæ." The seat and the appearance of the ulcerations immediately made the presence of a syphilitic affection probable, and this so much the more as the mucous membrane between the arytenoid cartilages was rather intact. The patient stated that he had, indeed, about twelve years ago, suffered from a catarrh of the urethra, with consecutive swellings of the inguinal glands, but that he had never suffered from syphilis, in the proper sense of the word. A sure diagnosis as to the presence of laryngeal syphilis was so much the more difficult as owing to an affection of the lungs, which could be proved by their examination, tuberculosis of the larynx was at any case possible, though tubercle-bacilli could not be detected in spite of repeated examinations.

Taking into account these conditions, Prof. Schnitzler first ordered the use of iodoform by insufflations into the larynx, and as these were not attended with any success, he ordered a systematic inunction cure for several weeks. All these procedures, however, failed, and the laryngeal

process, on the contrary, made further progress. In August and September the swelling of the whole laryngeal mucous membrane increased to such a degree that on account of the immobility of the arytenoid cartilages and the thickening of the vocal cords, the "rima glottidis" appeared to be quite closed, and the space for the passage of the air was reduced to a minimum. The disturbances of respiration had attained such a degree that tracheotomy was seriously taken into consideration. Though, owing to this course of the disease, the diagnosis of syphilis became more doubtful, Prof. Schnitzler, nevertheless, persisted in his first opinion, and now ordered the use of iodide of potassium in large doses, such as from 45 to 60 grains a day; The effect of this medication was quite surprising. The cough, hoarseness, and disturbances of swallowing soon decreased, the respiration became easier and freer, and the whole condition of the patient greatly ameliorated. The ulcerations completely cleansed and healed, though rather large scabs still remained. At present all was cicatrized, and there was no longer any trace of the ulceration. Only the middle part and the margins of the epiglottis, as well as the epiglottic plicæ, were transformed into a narrow scar; the arytenoid cartilages were almost of a normal appearance, and moved on phonation as well as on respiration quite freely. Prof. Schnitzler emphasized the special difficulties of the diagnosis in this case and wished emphatically to direct the attention to the success of the course of treatment.—*Medical Press and Circular*, Jan. 11, 1888.

Powders for the Treatment of Coryza.—VIGIER, in the *Journ. de Méd.* of January 8, 1888, gives the following formulæ:

℞.—Morph. hydrochlor. . . gr. ¼.
Pulv. gum. acac. . . . ℥i.
Bismuth. subnitrat. . . . ℥i½.
Pulv. althaeae . . . ℥i½.—M.
Sig.—By insufflation in the nares.

℞.—Amyl. pulv.
Acid. boric.
Tinct. benzoin. . . āā ℥ss½.

Mix, triturate, sift, and dry. If desired, 1½ grains of morphia hydrochlorate may be added.

What Antiseptics may be Used About the Eyes.—DR. WEEKS, of New York, in an article in the *Archives of Ophthalmology* for December, 1887, reports the results of his studies on this question, as follows:

The results of these experiments, confirming in greater part the results obtained by others, indicate as efficient antiseptic remedies, which can be used on the tissues without causing undue irritation, the following substances:

Bichloride of mercury, 1 : 1000 to 1 : 2000 on cut surfaces, on suppurating surfaces, and on the integument; 1 : 4000 to 1 : 8000 on mucous membranes.

Nitrate of silver, 1 : 100 to 1 : 500 on mucous membranes and on suppurating surfaces.

Chlorine water on mucous membranes and on suppurating surfaces.

Hydrogen dioxide as chlorine water.

Carbolic acid, 1 : 40 on cut surfaces and suppurating surfaces and on the integument.

Permanganate of potash, 1 : 100 to 1 : 200 on cut surfaces and on suppurating surfaces.

Alcohol, 66 per cent. on the integument and on suppurating surfaces, as in otorrhœa.

The *oil of cade* may be used to advantage in eczema, on account of its antiseptic and germicidal properties. *Calomel* is by far the most efficient antiseptic remedy in the form of powder that we have. *Iodoform*, which is highly valued by some oculists for use in infiltrated ulcers of the cornea, in gonorrhœal ophthalmia, and for the dressing of wounds, may be of service if it can be kept in contact with the parts for a number of hours. It is not irritating to mucous membranes or to cut surfaces, but is very slow in its antiseptic action.

Antiseptic dressings, so-called, are usually only aseptic. In order that bacteria may develop, it is necessary that they be on a surface containing 50 to 70 per cent. of water. We can thus readily see that bandage material must be free from all germs but those that are deposited on it from the air or from objects that it comes in contact with. It is antiseptic only when impregnated with an antiseptic substance and moistened. So long as a wound can be kept dry, healing will progress without the formation of pus, whether it is bandaged or not, simply because germs cannot develop if moisture is not present.

Mechanical, combined with *thermal*, sterilization in the use of hot water, is recommended as the best method of sterilizing instruments. As, however, the procuring of hot water is attended with some degree of trouble, and as a solution which can always be kept ready is more convenient, the combination of the mechanical with the chemical will probably be most used. The water used should be previously boiled and the antiseptic employed be either bichloride of mercury (1 to 2000), carbolic acid (1 to 20 or 1 to 40), or salicylic acid (1 to 1000). These act promptly and are efficient.

To cleanse the site of the operation soap and water should be used to remove oily substances and rough dirt, followed by a solution of bichloride 1 : 2000 to 1 : 5000 for germicidal effect. The surgeon's hands may be cleansed with a solution of 1 : 2000.

Hypnone, or acetaphenon, may be given in doses of ¼ of a minim to 3 minims, with caution, best administered in oil or ether, in capsules:

℞.—Hypnon. . . . . gtt. 4.
Ol. amygdal. dulc. . . . ♏ 8.
In 10 capsules.
Sig.—One or two capsules before retiring.

According to our present knowledge the value of hypnone is not clear; in some cases it has produced headache, and a very unpleasant taste.—*Deutsche med. Wochenschrift*, January 5, 1888.

The Treatment of Carotid Hemorrhage.—TREVES, of London, describes the following procedure, in the *Lancet* of January 21, 1888, which he employed successfully in four cases, one of which he describes as follows:

In the neck, pressure upon the carotid artery cannot be applied with success, or maintained for a serviceable length of time. The vessel can, however, be very readily occluded for a while and the carotid circulation arrested without the artery being permanently closed. This is effected by exposing the artery in the usual way

and passing around it a thick piece of soft catgut. This is tied in a very loose loop. By pulling upon the loop the circulation through the vessel is at once arrested, but is, however, at once restored when the tension upon the loop is relaxed. Without discussing the possible value of this procedure, the following case may be briefly detailed.

A man, aged twenty-five, was brought to the London Hospital in 1880, bleeding profusely from a deep wound in the neck, about the level of the great cornu of the hyoid bone. While attempting to open a soda-water bottle the bottle burst, and a fragment of glass was driven into the neck. The cut made was less than one inch in length. The glass had been removed. The bleeding had been very profuse, and was arterial. The patient was blanched and almost insensible. The radial pulse could scarcely be felt. The bleeding was for the time checked by pressing a tampon against the wound. It was obviously useless to attempt to find the bleeding point while blood was welling up from so deep a wound. I, therefore, at once exposed the common carotid artery through a lower incision and placed a catgut loop around it. Traction upon this arrested all bleeding. The patient was placed in bed and surrounded by warm bottles. His condition was so grave that I did not feel disposed to search for the bleeding point. Traction upon the loop was maintained for half an hour. On relaxing the catgut no bleeding took place, and it never again recurred. The loop was left *in situ* for four days, when it was removed. The man, who was in vigorous health at the time of the accident, made a rapid and uninterrupted recovery. I supposed the bleeding to have come from the superior thyroid artery.

Alcohol for Children.—JACOBI, in the *Archives of Pediatrics* for January, 1888, writes that alcohol has conquered its place among the medicinal foods in the diseases of infancy and childhood. Very little, if any, is required in catarrhal, or the first stages of inflammatory, diseases. It is contraindicated in meningitis, acute cardiac ailments, gastro-enteritis, peritonitis, and acute dysentery. It finds its application in depressed strength and vitality; thus, in the rules for the management of infants during the hottest days of summer, which the Health Department of the City of New York has published annually these fifteen years, he recommended the administration of a teaspoonful of whiskey daily. It is also required in chronic diseases and slow convalescence.

Its action is stimulant, nutritive, antipyretic, and antiseptic. It is decomposed into carbonic acid and water, and thus saves the waste of material parts of the body. When given in sufficient quantities, it reduces the temperature; the amount required for that purpose is, according to Binz, forty grammes, corresponding with about three ounces of brandy or whiskey. Its most beneficial action is exhibited in sepsis of all forms, mainly also in the septic variety of diphtheria. It is almost impossible to give too much. The doses must be watched so as to be sufficiently large. Whoever is not afraid of giving six ounces of whiskey daily to a child when one or two fail, or ten or twelve when six fail, will soon convince himself of its power for good. It must never be given in concentration; the gastric mucous membrane tolerates no pure brandy or whiskey for any length of time; they must be diluted with either water or milk properly prepared. Wines, brandies, and whiskeys are not equivalent. The latter is obtained pure with greater facility, and at less expense, and besides has, for many, a less disagreeable taste than either of the others, which are often adulterated. The ether contained in wines militates against any antifebrile effect which may be expected from it; the fusel oil with which brandies are too frequently adulterated, acts rather as a paralyzing than as a stimulating agent.

Benzol in Whooping-cough.—DR. J. LOWE highly recommends benzol as a remedy for whooping-cough. To deprive the benzol somewhat of its hot, burning taste, and to prevent it from causing nausea, he advises it to be administered in a viscid mixture, and in small doses, usually in quantity of three or four minims. Yet even smaller doses are effective, and for a child four or five years of age two minims every two hours will be sufficient. The following mixture is recommended by him:

℞.—Benzol. puriss.	. . . .	♏32.
Glycerini	. . . .	fl. ℥ 1½.
Ol. menthæ pip.	. . .	♏10.
Syr. mori	. . . .	fl. ℥ ½.—M.

A teaspoonful every two hours.

[In place of syrup of mulberries, some other pleasant syrupy vehicle, such as syrup of raspberries, may be used.]—*British Medical Journal.*

Oleate of Atropine in Suppositories is recommended by J. F. BROWN, of Dover, England, as a substitute for extract of belladonna. Ten grains of atropine dissolved in a half-ounce of oleic acid and diluted with oil to a fluid-ounce and twenty minims, will form a solution of which each minim will represent one grain of the extract.—*Pharmaceutical Journal.*

The Treatment of Ophthalmia Neonatorum.—MULES, of the Manchester Eye Hospital, in a Prize Essay published in the *Medical Chronicle* for January, 1888, describes the following treatment:

The mother or nurse should first wash the eyes in warm water to remove the secretion and free the lids. The surgeon should be seated in a convenient chair, with a folded towel across his knees, and with medical appliances within reach of his hand. These appliances are: (1) A plentiful supply of pieces of clean rag; (2) solutions of argenti. nit., 5 grs. to oz., and 10 grs. to 1 oz.; (3) vessel of clean water; (4) two camel's-hair pencils to apply the solutions and wash the excess of fluid away; (5) a bottle of eserine, 5 grs. to 1 oz., and dropper; (6) lid elevators. He then receives the head between his knees, yet supported by the towel. The nurse tucking the child's legs under her left arm, supports the body on her raised knee, holds the child's hands with one hand, and has the other at liberty to assist the surgeon. The surgeon first proceeds to examine the condition of the cornea by gently raising the upper lid with his finger—if there is any difficulty in this manœuvre he uses an elevator. A bent hair-pin often answers admirably. He next everts the lids, wipes them dry, paints them with the silver solution of the required strength, taking special care to get the *back folds of the conjunctiva*, and washing off the excess of solution with clean water, carefully replaces the lids by drawing them

downward and away from the globe. This process is repeated by the surgeon every morning until the disease is arrested, his object being to produce a slight eschar, which either destroys the microörganisms or prevents their multiplication. The effect lasts about twelve hours. In severe cases the solutions can be reapplied at night. However careful the surgeon may be his efforts are of little avail unless he is ably seconded by the nurse. Her duties are—to prevent the recollection of pus, by constantly opening the lids and wiping the matter away with clean rags; to wash the conjunctivæ with a weak alum or boracic acid solution, 3 grs. to 1 oz.; to anoint the lid margin with cerate to prevent adherence, and to combat the feverish restlessness by fresh air and careful attention to diet.

Menthol in Laryngeal Phthisis.—BEEHAG, of the Royal Infirmary, Edinburgh, reports his use of menthol by insufflation and by applications with a brush or swab as follows:

With the object of securing more prolonged contact with the diseased tissues in phthisis laryngea when there is much secretion present, I have introduced a powder to be insufflated alternately with the injections. The formula is as follows:

℞.—Menthol	ʒss.
Ammon. chlor.	ʒjss.
P. acid. boric.	ʒj.—M.

The same powder, when pulverized very finely, will be found to be very useful in chronic laryngeal catarrh, and the after sensations are not so unpleasant as those which follow upon the insufflation of ordinary powders.

In cases of chronic pharyngitis with hyperæsthesia or paræsthesia I use the well-known Mandl's formula with menthol superadded, the prescription being as follows:

℞.—Iodi.	gr. vj.
Potas. iod.	gr. xx.
Aquæ	ʒiij.
Menthol	ʒjss.
Glycerini	ʒvj.—M.

The menthol, which should be powdered very finely, is for the most part here suspended in a fine state of division, and the mixture requires to be shaken occasionally. —*Edinburgh Med. Journal*, January, 1888.

Litholeine.—NOEL, in the *Gazette Médicale de Paris* of January 31, 1888, reports the advantages of this substance, which is a product from the distillation of petroleum. It is an oily liquid, yellow in color, free from fats and resins. Its reaction is neutral, it contains traces of calcareous materials, and is insipid and odorless. Clinically it has proved useful as a substitute for solid and liquid vaseline; it possesses antiseptic and antiparasitic properties, and has been used with the best results in eczema and parasitic skin diseases.

The Treatment of Diarrhœa with Greenish Stools, in Infants.—In THE MEDICAL NEWS of July 9, 1887, page 47, we described a method of treating the diarrhœa of nurslings, characterized by greenish stools, practised by HAYEM, of Paris. He has continued his clinical studies on this subject, and in the *Gazette Hebdomadaire* of January 20, 1888, he reports that he has extended his treatment to adults and finds new evidence of its value. The treatment consisted in the administration of lactic acid, in convenient menstrua, as a germicide for the bacillus present in the intestines of these patients.

SEVESTRE has also arrived at similar conclusions by clinical research, and reports that he has obtained good results by using the remedy in larger doses than Hayem employed, he had given a teaspoonful of lactic acid, 1 to 50, with simple syrup every ten minutes in grave cases. In "bilious diarrhœas" he had obtained good results from large doses of sodium bicarbonate.

Saccharin in Various Combinations.—CHUCHE, in the *Revue Gen. de Clin. et de Thèr.*, January 5, 1888, gives the following formulæ for various combinations of saccharin:

℞.—Quiniæ sulphat.	gr. 8.
Acid. sulphur.	q. s.
Essen. menth. piper.	gtt. 5.
Solut. saccharin.	gtt. 10.
Aquæ destillat.	gtt. 100.

℞.—Rhei pulv.	ʒ 2½.
Saccharin.	ʒ 2½.
Syrup. fœniculi	gtt. 4.

℞.—Chloral. hydrat.	℥ 75.
Solut. sacchar.	℥ 75.
Aquæ destill.	ʒ 25.

℞.—Sodii bicarb.	
Acid. tartaric.	āā ʒ 2¼.
Saccharin.	gr. 30.

[The superiority of saccharin to sugar, as a sweetening agent, makes it most convenient in combination; the solution mentioned is undoubtedly a saturated one.

These formulæ are intended merely to indicate some of the combinations most generally used, without specifying dosage.]

Ichthyol, Internally.—VON NUSSBAUM, of Munich, has observed that ichthyol is of value, administered internally, in conditions of gout, rheumatism, and capillary engorgement from varying causes.

He prescribed it in pills, each containing one and a half grains, and gives it in increasing doses, until the patient takes from seven and a half to ten grains morning and evening. When good results are obtained the remedy may be discontinued, but on an exacerbation of rheumatic trouble the full dose last given should be employed at once.

With the exception of a few cases, who could not take the remedy in small doses, no unpleasant effects were seen.

Von Nussbaum, by way of experiment, took seventy-five grains of ichthyol in twenty-four hours without inconvenience.

In a few patients he found that it excited a tendency to eczema.—*Therapeutische Monatshefte*, January, 1888.

Rectal Feeding.—From a study of the subject of rectal alimentation, DR. WEAVER (*Transactions of the Luzerne County Medical Society*) has formulated the following conclusions:

1. By the use of enemata life can be sustained indefinitely with little, if any, loss of weight to the body.

2. In a large proportion of cases in which rectal aliment is used, true digestion of albuminous, saccharine, and fatty food takes place, by virtue of inhaustion, or a reversal of the normal peristalsis of the alimentary tract.

3. While this is the case, there are doubtless instances in which retrostalsis does not occur, and for that reason the food used should first be artificially digested before being injected into the rectum.

4. While milk, eggs, and brandy are the best aliment for rectal nutrition, no one article should be used for too long a time, but frequent changes should be made, observing the greatest care to prevent irritation of the rectum, or intolerance of that organ for the nutriment required.

5. The enemata should, if possible, be administered by the physician himself. Where difficulty in retaining the aliment is encountered, the colonic method is preferable, the food being propelled through a rectal bougie. The food should be of the temperature of the body.

6. The rectum having once become intolerant of enemata, *absolute rest* must be given to that viscus for a few days, and reliance be placed on nutritious inunctions of the surface of the body.

7. For rectal alimentation there exists a wider range of usefulness than has heretofore been assigned to it. It is not only appropriate in the severer forms of chronic disease of the stomach and œsophagus, but is indicated and should be utilized in the management of all *acute* diseases when, from any cause, the stomach becomes intractable and rebellious.

8. In diseases of the stomach, even where a portion of the food ingested is retained by that organ, only to undergo fermentation, inducing thereby pain and distress, it is more logical to resort to rectal alimentation, not as an *adjunct* to, but a *substitute* for, stomachal ingestion.

9. Certain organic lesions as well as functional disturbances of the stomach are curable by means of rest to that organ, and by no other means. In rectal alimentation we have a safe and sure means of nutrition, pending the necessary period of rest to that organ. — *Dietetic Gazette*, January, 1888.

The Influence of Tissue Changes in Producing Uterine Flexions.—GRAILY HEWITT, in the *Medical Press and Circular* of January 11, 1888, summarizes his views on this point as follows:

1. Undue softness of the uterus associated with defective nutrition either in nulliparous or in parous cases usually precedes flexion. 2. Flexion then occurs. 3. The flexed and soft uterus readily becomes congested. 4. The congested flexed uterus generally becomes hypertrophied. 5. The flexion now permanent is an obstacle to removal of congestion. 6. Compression of uterine tissue caused by flexion is an important element in chronic metritis. 7. Endometritis is, as a rule, a secondary effect of chronic general congestion of the uterus.

For Eczema.—BROCQ, in the *Revue Gén. de Clin. et de Thér.*, January 5, 1888, prescribes the sodium salts as follows:

℞.—Sodii salicylat.
Sodii benzoat. . . . āā gr. 30 to 75.
Sodii bicarbon. . . . . ʒ 2½.
Aquæ destill. . . . . ʒ 12½.

Any compatible tincture or syrup may replace a part of the water.

Dose two to four teaspoonfuls, or a tablespoonful daily.

Arsenic and sodium may be given in

℞.—Sodii arsen. . . . . gr. ⅓.
Sodii benzoat. . . . . gr. 30 to 75.
Sodii bicarb. . . . . ʒ 2½.
Aquæ . . . . . ʒ 12½.

This prescription may also be varied, in its vehicle, as needed.

Dose two to four teaspoonfuls daily.

Meat in Phthisis.—COHEN, in the *Dietetic Gazette* for January, 1888, writes as follows:

The opinion most widely prevailing at the present time assigns the first rank as an aliment in phthisis to flesh, and more especially to beef. The results obtained by certain individuals, who devote themselves to the treatment of disease by an exclusive diet of beef prepared in a certain and most excellent manner, conjoined with lavatory potations of hot water to prepare the digestive canal for the reception and disposition of the aliment, cannot be ignored, whatever we may think of the theories and methods of the practitioners in question. Without confining themselves to beef, scientific physicians are justified in giving it the first rank.

It should be taken at least twice daily, three times if possible. It may be eaten raw, as it comes from the butcher, or it may be chopped finely, seasoned to taste, and made into little cakes, which are eaten raw or slightly browned on the gridiron. It may be taken in the form of rare beefsteak broiled in its own fat, or as very rare roast beef. Other methods of cooking are to be prohibited. The meat is to be as juicy as possible and fibrous portions are to be removed.

Very often one can be satisfied with the use of butcher's meat, raw or cooked as above. Sometimes, however, whether from partial failure of digestive powers or other conditions necessitating reduction in bulk without loss of nutritive material, or suggesting conservation of the energy that would be expended in digestion, it becomes necessary to resort to special methods of preparation. The meat powders prepared by various pharmacists, more especially for forced feeding, here render valuable aid. By cutting boiled beef into fine pieces, drying by means of a water bath, and grinding in a coffee mill with the teeth set closely, an excellent meat powder may be made in the kitchen. (Dujardin-Beaumetz.)

The preparation from which the writer has seen the greatest benefit, and which he is in the habit of most frequently prescribing, is Beef Peptonoids. Whether from improvement in the process of manufacture, rendering it more palatable, or from decrease in the fastidiousness of patients, there has not recently been the same difficulty in getting patients to persevere in the use of it that was experienced in former years.

The methods of administration may be varied almost indefinitely. It may be added to soups and broths, to milk punch, egg-nogg, etc., taken in warm or cold water, or made into a paste with milk or water and spread upon bread. Beginning with a teaspoonful three or four times a day, the amount is to be increased as soon as the preferable method of administration is determined upon, to a tablespoonful or more. It is preferably given among the supplementary articles of diet, between meals.

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ISCHURIA FROM PROSTATIC HYPERTROPHY.

DURING the past year, several interesting contributions have been made to the subject of retention of urine from enlargement of the prostate gland, which throw some light upon the benefit to be derived from excision and incision of the obstructing body. In a paper read at the Clinical Society of London on November 11, and recorded in the *British Medical Journal* of November 19, 1887, MCGILL narrated three cases in which he had resorted to epicystotomy, and removed with scissors and forceps the hypertrophied median portion, with the result of enabling the patients to dispense with the use of the catheter. In these cases, the retention had existed, respectively, for five weeks, seven months, and three years, and was complicated by calculi in one, and by fetid urine in two.

Suprapubic prostatectomy opens up a new field for the operator in a class of cases that have always proved to be a source of great anxiety to the surgeon, and suffering to the patient. One of its advantages is that it does away with the necessity of permanently wearing a tube to drain the bladder; but how far it will prove applicable to all cases of retention from a valve-like projection of the median portion of the prostate will have to be determined by extended experience.

It can scarcely be admitted that, except in comparatively recent instances, ischuria is due solely to the enlarged middle lobe. The longer the retention exists, the more and more surely do the muscles of the bladder become incapacitated for the performance of their function, until, finally, in old-standing cases, the viscus is paralyzed, and the neck of the bladder embedded in the enlarged prostate is rigid. In cases of this kind, the extirpation of the obstructing portion will do no good, as is exemplified by the examples of epicystotomy with removal of the median lobe with the galvanic cautery, related by BENNO SCHMIDT, of Leipzig, at the last Meeting of Naturalists and Physicians at Wiesbaden, and recorded in the *Wiener med. Presse*, No. 51.

In the third edition of his *Lectures on the Surgical Diseases of the Urinary Organs*, lately issued, HARRISON states that he has done prostatotomy over twenty times, but he unfortunately does not give the detailed account of his cases which the profession has a right to expect. His results are summed up as follows: "Not a single instance has yet happened where I have regretted having done the operation, or directly or indirectly connected the death of the patient with the proceeding. In two instances only, so far as I know, did the patients die; one three weeks after the operation, and the other four. Both lived longer and more comfortably than they would otherwise have done, and had nothing to regret in what was undertaken for them. Both patients showed after death a condition of the urinary organs which was beyond repair." In the remaining cases, we are led to infer that the results were satisfactory, and in the three cases in which the histories are given, the patients were well, and had discarded the catheter for respectively six, twelve, and eighteen months.

BOTTINI, at the meeting of the Italian Medical Association at Pavia, of which a note may be found in the *Annales des Mal. Gén.-Urin.* for December, has also recorded favorable results from his operation of internal prostatotomy with the galvanic cautery, a procedure which he has resorted to for upward of ten years.

Incision and excision of the obstructing portion of the prostate have, more especially in view of their safety, been too much neglected by surgeons. We are firmly convinced that they should be subjected to unprejudiced and extended trial, since the meagre accounts we have presented of their results show that they are capable of affording permanent relief, despite the dogmatic assertion of a recent writer in Heath's *Dictionary of Practical Surgery*, that they are "worse than useless."

THE CAUSATION OF TYPHOID FEVER.

THOUGH the bacillus of Eberth, Koch, and Gaffky is recognized by bacteriologists and practical pathologists as the cause of typhoid fever, this relation seems not correctly estimated by hygienists and clinicians. This is especially true in America, for which reason the observations of VAUGHAN and NOVY, published in THE MEDICAL NEWS of January 28th, deserve more careful attention than even their great intrinsic value would entitle them.

The researches of the last seven years prove the presence in all cases of typhoid fever, in the intestinal lesions, mesenteric glands, spleen, and liver, of a bacterium which possesses distinct peculiarities of form, size, mode of growth, and reaction to coloring matters, as well as a distinct chemical product or ptomaine. These facts, with the absence of the bacillus in other diseases, and its presence in water and milk suspected of having caused typhoid fever, would alone almost suffice to establish its causal relation. The crucial experiment of producing the same disease in animals by pure cultures of the bacillus failed. This failure, however, was due to the fact that none of the domesticated animals acquire typhoid fever when exposed to the same causes as man in various epidemics. In this respect typhoid fever corresponds to cholera, and just as Koch found that by changing the habit, so to speak, of the animal intestine, it became a suitable nidus for the development of the cholera germ, so Seitz was able to produce a peculiar disease by proceeding in the same way and injecting cultures of typhoid bacilli. These experiments were repeated and modified in various ways, with the result of proving that not only cultures of the bacillus, but even such as were sterilized or freed from germs, produce in animals a distinct disease.

It is, therefore, evident, that the bacillus acts not only locally, as in the production of intestinal lesions, but also that it produces chemical substances belonging to the class of poisonous ptomaines. This goes far in explaining some peculiarities in the clinical course of typhoid fever. The ptomaine isolated by Brieger from cultures of the bacillus, named by him typhotoxine, does not seem able to produce all the symptoms, notably fever, one would expect from such a principle. The product obtained by Vaughan and Novy seems to fulfil the conditions to a greater degree, though as their investigations are as yet not complete it is too early to base any theories on it. It is important to bear in mind that in the lower animals typhoid material produces an intoxication, rather than an infection, but nevertheless an intoxication which is distinctive and caused by a distinct substance. Still, it is by no means indifferent whether cultures or their products be used in the experiments. In the latter case much larger doses are necessary to produce a given effect, a thing easily explained by the fact that the bacilli can live for hours or days in the animal body, and during that time, of course, continue to produce ptomaines.

The already large amount of testimony showing the occurrence of the direct cause of typhoid fever in drinking water is increased by this work of Vaughan and Novy. As this relation was well known even in pre-bacterial days, it is not likely the present lesson will be heeded by sanitarians any more than the former ones. Fortunately, however, there is promise of another means of prevention, namely, by inoculation. BEUMER and PEIPER, in an extensive series of experiments (*Zeitschrift für Hygiene*, Bd. 2, Heft iii.), found that by using cultures which had been sterilized by heat they could produce in guinea-pigs a condition which presented the same symptoms and anatomical changes, and caused death in the same time as did the live bacilli, uniformity of dose being understood. By a gradual treatment of the animals with such cultures, beginning with the minimal dose and increasing it slowly, it was found that the guinea-pigs acquired perfect immunity toward doses ordinarily lethal. In their first series of such experiments, out of eleven animals only one died, and there is no reason to doubt that with more experience perfect results can be obtained. This certainly seems more promising than any method yet proposed for preventive inoculation.

The next thing to do, as Beumer and Peiper say in conclusion, is to ascertain, in man, the respective roles of bacillus and ptomaine. This having been learned, and the technique of inoculation having been perfected, there would be no reason to hesitate in making cautious experiments on human beings, experiments which, when we regard the ravages of typhoid fever, would be quite as justifiable as those being made on such an enormous scale for a disease so comparatively rare as hydrophobia.

SUCCESSFUL SPINAL SURGERY.

MR. VICTOR HORSLEY has recently applied the principles of treatment which have guided him in cerebral surgery to the treatment of spinal affec-

tions. At a late meeting of the London Medical and Chirurgical Society a private patient of Dr. Gowers and Mr. Victor Horsley very generously allowed the Fellows and visitors of that Society the opportunity of seeing all that had been done for the improvement of his condition. He had spent about three years in severe pain, which was most intense just below and inside the angle of the left scapula, and was accompanied by absolute loss of motion and sensation of the body and limbs below that level. The upper border of the anæsthesia was distinctly in the region of the fifth intercostal nerve on the left side, on the right it was less accurately defined, but did not extend higher. All the symptoms agreed with those of tumors of the spinal cord, and the intense pain afforded ample justification for making an attempt to excise the tumor. Mr. Victor Horsley accordingly removed the spines and parts of the laminæ of the fifth and fourth dorsal vertebræ; but not until the third vertebra had been similarly treated did the tumor come into sight. It was a small oval myxoma compressing and making a deep impression on the left side of the spinal cord below the third vertebra. It was easily shelled out, and under careful antiseptic treatment the temperature did not rise more than 1° F. The wound healed rapidly, except at the uppermost point, where a drain had been left in by which a little cerebro-spinal fluid flowed away very slowly. For three or four weeks the former acute pain did not lessen, and even at times seemed more agonizing; but after that it gradually and intermittently decreased, and now, after seven months, is entirely gone; the sensation and motion of the body and legs are almost completely restored.

We join most heartily in the congratulations which the *British Medical Journal* extends to the operator in its account of the case, and trust that this first successful operation for spinal tumors may lead American surgeons to emulate their English brethren in attaining success in the management of these otherwise intractable cases.

SMALLPOX IN LODGING-HOUSES.

THE modern lodging-houses that are springing up in all our large cities deserve to be an object of special watchfulness on the part of the local health authorities, on account of the relations they sustain to winter outbreaks of smallpox. Some of our cities would be relatively free from that pest if the nomadic population which patronizes these cheap resorts could be legally held under sanitary surveillance and made safe by compulsory vaccination. A daily inspection would be advantageous to the community, in regard to many of these "hives" of impoverished and shiftless lodgers who, perhaps on the morrow, may carry infection to a jail, an almshouse, or a crowded steamer.

In Brooklyn, New York, the grand jury has just made a declaration censuring the authorities for failing to cause a weekly inspection of those "low-priced lodging places where temporary refugees, whose financial circumstances and migratory character forbid careful attention to cleanliness, congregate in large numbers." In the city above named, smallpox has been unusually prevalent this winter, and a very considerable proportion of the infecting cases have been traced to these cheap houses whose nightly population has been estimated to exceed five thousand persons, mostly tramps or persons but little superior to that class. Some of these places are so unsanitarily conducted that it has been said of them that all the vile odors of the town meet there once a week for consultation.

MEDICAL DIVISION OF THE PENSION BUREAU.

WE give on another page copies of two bills recently introduced in the House of Representatives affecting the medical officers of the Pension Bureau, and medical examining boards. The first bill increases the Medical Staff of the Pension Office by one surgeon and six medical examiners, and increases the compensation allowed to each class.

The salaries specified in the bill are certainly not too high, taking into consideration the amount of knowledge required and the importance to the Government of correct decisions by these officers.

The rates of compensation fixed by the second bill also seem low, and the only change which it makes is to give a little additional compensation to the Secretaries of Boards of Examining Surgeons, in consideration of the extra clerical work which they have to perform, a change which appears reasonable and just. We therefore hope that both these bills will become law, and if the Pension Examining Surgeons of the county interest themselves in the matter there is little doubt that this will be the case.

THE TREATMENT OF PULMONARY PHTHISIS BY CREASOTE.

IN THE MEDICAL NEWS of January 21, 1888, we called attention to the results reached by Sommer-

brodt and others by this method of treatment. Since that time we have had our attention called, by a kindly correspondent, to the fact that the formula, which was copied directly from the German, is not very clear. We have, therefore, hunted up the original formula used by Gimbert and Bouchard, which was also used by Fräntzel, and is given in his paper in the *Deutsche medicin. Wochenschrift* of April 7, 1887, as follows:

℞.—Creasoti	. . . . .	13.5.
Tincturæ gentian.	. . . .	30.0.
Spirit. vini rectific.	. . . .	250.0.
Vini Xeric.	. . q. s. ad.	1000.0. M.

S.—A tablespoonful twice or thrice daily in a wineglassful of water.

As this formula is identical with that which Sommerbrodt states that he used, we hope that this note will not only serve to make clear the rather doubtful recipe first given, but enable our readers to put the method to practical tests and report their results.

DR. W. T. COUNCILMAN, Associate Professor in Pathology in the Johns Hopkins University, has been elected to the Chair of Anatomy in this institution. The chairs of Chemistry, Physiology, Pathology, and Anatomy are now filled in this University, preparatory to the opening of the Medical Department.

DR. HENEAGE GIBBES, late of Westminster Hospital, London, has arrived in this country, and has entered upon his duties as Professor of Physiology in the University of Michigan, Medical School, at Ann Arbor.

ABOUT fifty of the English laryngologists have signified their intention of joining a proposed British Laryngological Society; Sir Morell Mackenzie's name heads the list.

THE first number of *The Brooklyn Medical Journal*, edited by the Editorial Committee of the Kings County Medical Society, has been received. The *Journal* is attractive in appearance, and the excellence of its contents and the ability of its Editorial Committee bespeak for it a place among our valued exchanges.

THE *Journal of Reconstructives* became, on January 1, 1888, the *Dietetic Gazette*, and passed under the editorial control of Dr. George B. Fowler, and we understand that it is proposed to issue it as a monthly. The scope of the journal is indicated by its name, and the January number presents a very attractive table of contents.

THE Methodist Episcopal Hospital of Brooklyn, New York, has just been opened, and the following medical staff has been appointed:

Consulting Physicians.—Alfred E. M. Purdy, M.D., Alex. Ross Matheson, M.D.

Consulting Surgeons.—L. Bolton Bangs, M.D., Nelson L. North, M.D.

Attending Physicians.—William H. B. Pratt, M.D., Benjamin F. Westbrook, M.D.

Assistants.—Warren C. Sneden, M.D., Glentworth R. Butler, M.D.

Attending Surgeons.—Lewis S. Pilcher, M.D., George R. Fowler, M.D.

Assistants.—John Bion Bogart, M.D., William M. Thallon, M. D.

Pathologist.—Eugene Hodenpyl, M.D.

WHOOPING-COUGH was very fatal in London during the last quarter of 1887, causing 828 deaths. This was one-third of the mortality by the chief zymotic diseases, or 2580 deaths, and about one-fortieth of the total mortality from all causes in that quarter, or 20,732 deaths. Scarlet fever, with 658 deaths, followed next in severity. In Salford, whooping-cough was unusually destructive of life. The same was true of Aberdeen and Glasgow, Scotland, also in Belfast, Ireland.

THE *British Medical Journal* of January 28th, announces its weekly circulation at 14,500 copies; the figure having formerly been 14,000. It estimates that this total exceeds the combined circulation of all the other medical periodicals printed in Great Britain. This increase of 500 subscribers was subsequent upon a special issue of the *Journal* of December 10th, to the profession at large.

REVIEWS.

A TEXT-BOOK OF THERAPEUTICS AND MATERIA MEDICA, INTENDED FOR THE USE OF STUDENTS AND PRACTITIONERS. By ROBERT T. EDES, A.B., M.D., formerly Professor of Materia Medica and Jackson Professor of Clinical Medicine in Harvard University. 8vo, pp. xi. 652. Philadelphia: Lea Brothers & Co., 1887.

THE announcement some months since that this book was about to be published, was received with pleasure by students of therapeutics. The appearance of the volume will, however, disappoint their expectations, for the scope of the work does not fulfil their anticipations. The intention of making a text on materia medica is denied in

the preface, notwithstanding the title, and the directions for the use of drugs are too brief to prove satisfactory to the practitioner or student.

In the effort to condense, Dr. Edes has left out much matter which we believe it to be impossible to throw aside without great loss. As a good example of this we may mention the article on digitalis, the consideration of its physiological action and indications being not over two pages in length; aconite covers scarcely as much; while antipyrin and antifebrin cover, each of them, but a half page, or perhaps a few lines more. In addition to these disadvantages some of the statements made are, to say the least, calculated to mislead, if they are not absolutely incorrect, and vary so with commonly accepted belief that the author should have enlarged his text to defend himself. Thus, he states that the cumulative action of digitalis is that peculiar change which comes on when a person under the influence of the drug suddenly sits upright having previously been lying down, and that the "cumulative" action implies in no way whatever that any actual accumulation of the drug has occurred in the system. This statement, we believe, is not only contrary to the teachings of the best therapeutists of the day, but also to our knowledge, derived from both practical and experimental researches on the drug. Cumulative action is, we believe, generally recognized as being the result of the constant administration of digitalis, whereby, owing to its slow elimination, it accumulates in the body. This is particularly the case where kidney lesions are present, and where effusions of serum have taken place into visceral cavities. Under these circumstances sudden withdrawal of the effusion by tapping will often cause cumulative action by the absorption by the bloodvessels of the drugged liquids in the connective tissues. Cumulative action may, of course, come on from other causes, but it is often produced very suddenly by this means.

As we have already said, as a text-book it is far too meagre, and as a "Quiz Compound" it does not fulfil the requirements of such a doubtfully valuable sphere of medical literature.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, February 2, 1888.

THE PRESIDENT, A. JACOBI, M.D., IN THE CHAIR.

DR. ROBERT W. TAYLOR read a paper on

XERODERMA PIGMENTOSUM AND ITS RELATION TO MALIGNANT NEW GROWTHS OF THE SKIN.

It was in 1870, he said that Hebra and Kaposi published in their book the first account of a skin disease peculiar to childhood, multiform in its manifestations and indelible in its disfigurements. It was especially destructive to the eyes, nose, and mouth, and by its subsequent new growths was liable to lead to death. Their account of the disease was based on four cases observed by them. In 1877 Dr. Taylor read before the American Dermatological Association, at its annual meeting, a paper giving the histories of seven cases, all of which had been under observation for a number of years. At the same meeting Dr. C. Heitzmann also reported a case. In 1878 Dr. Taylor read a second paper on this subject before the Association. and the paper which he now presented to the Academy of Medicine, he said, embodied the results of his observations and studies for fifteen years.

In 1878 Duhring also reported a case, and in 1882 Kaposi published a valuable paper on the disease. In 1883 Neisser reported two cases, and embodied with their description an account of six cases observed by Rüder. In the same year Vidal's paper was published. In 1884 Pick published a paper, and in the same year Crocker also published one containing the histories of three cases, the only ones hitherto observed in England. In 1885 Kaposi reported his ninth case, and the same year Dr. J. C. White, of Boston, also reported one. Altogether forty cases had been observed up to the present time, but one of these had to be rejected as not being in reality an instance of the disease in question. There was more or less doubt about the diagnosis of some of the others, on account of the lack of a report of the earlier stages, but, notwithstanding the absence of certain data that were highly desirable, they were accepted.

Dr. Taylor then proceeded to give in detail the history of some of his cases. Three of them occurred in one family, and two of them in another family, closely related to the latter. All his cases were in females with one exception. In one of them, in which there were numerous vascular tubercular elevations, there was a supraorbital tumor of considerable size, which was operated upon by Drs. Gruening and Gerster, and later it was found necessary to enucleate the eyeball. The one boy who was the subject of the disease when seven years old was attacked with mumps, and, resulting from this there was an abscess, which had to be opened. The wound thus made never healed. Extensive ulceration followed, and this finally involved the coats of an artery, in consequence of which uncontrollable hemorrhage occurred, from which the patient died. Another of the children died of marasmus, and still another was accidentally drowned.

In these seven cases, Dr. Taylor said, all of the clinical features of the disease were portrayed. The affection consisted essentially of telangiectases, pigmentations, and atrophic changes; to which were superadded certain polymorphous new growths which were primarily benign. but were liable to degenerate into malignant tumors. In six of the cases the disease commenced when the children were about seven months old, and in the seventh at the age of fourteen months. The weight of evidence places this affection as one of very early childhood, and he laid great stress upon the prodromal erythema, the usual seat of which is on the face under the eyes, and which is liable to be mistaken for sunburn. It occurs in infants in good health and without apparent cause. This prodromal hyperæmia lasts from one to three months, and as it gradually disappears the pigmentations begin to make their appearance. They affect the face and the exposed parts of the neck and extremities; often extending as low as the third rib on the chest, and up to the elbows on the arms. They vary in size from a pin-head to a lentil, and are not much elevated above the surface. Scattered among them are the red or telangiectasic spots, in which congeries of capillary bloodvessels can be distinguished with a strong glass. Upon the hands there is much less of the prodromal

erythema than upon the face. In the meanwhile there are no marked local symptoms, heat, burning, and itching being absent; and the general health remains good. The lesions are always characterized by alternating exacerbations and periods of inactivity; so that the course of the disease is more or less erratic.

The period of the pigment spots and the telangiectases belongs principally to early childhood, and these two orders of lesions are peculiar to the stage of hypertrophy. The atrophic changes usually make their appearance at the end of the first year. The atrophy is not, as a rule, symmetrical, and varies greatly in extent and intensity in different subjects. It is not commonly as well marked on the extremities as on the face. This atrophy of the skin develops in accordance with the atrophy of the bloodvessels of telangiectasis. It is especially apt to affect the eyes, nose, and mouth, causing ectropion and deformity of the nasal and oral cavities. Very often hypertrophic changes are taking place at the same time as the atrophic. The career of the primary disease can then be briefly divided as follows: First there is, after a general hyperæmic stage, dilatation of capillaries; then these increase in size by new growth of their elements. This gives rise to the red spots, which contribute to the first stage of the disease. After remaining a variable period, these minute capillary new growths undergo atrophy, leaving on their site brown spots. This constitutes the second stage, while the third is occupied in the continual new growth of vessels upon the site of those already obliterated in the atrophy of the skin itself.

The pigmented spots, or pustules, are not necessarily permanent, but in certain localities, particularly where atrophy existed, they come and go, fading and being replaced by other similar spots. They vary in color from a light brown to black, and invariably appear in the exact positions previously occupied by the red ones, constituting a new function of the superficial capillaries. If these changes are carefully studied in any part, it is observed that a vessel first undergoes enlargement and becomes prominent, forming a red spot, and then it disappears by atrophy, the brown spot left partaking of the conformation of the usual spot.

The face presents a mottled appearance, and, in addition to the freckles and the red spots, there are found white spots ranging from a quarter of an inch to an inch in diameter. There is a want of elasticity of the skin, which is like parchment, or seems as if it had been coated with inflexible collodion. The appearance presented not unfrequently resembles the cicatrix of an extensive but superficial burn. There is an almost total absence of the normal secretions, and there is apt to be a peculiar immobility of expression upon the countenance. In some cases, however, the atrophy is much more marked than in others, and it is always less prominent upon the hands than upon the face. The atrophic condition is similar to that met with in senile atrophy of the skin.

While the atrophic changes are to be dreaded on account of their liability to result in deformity, the keratotic or warty patches which grow from some of the pigment spots are liable eventually to become malignant growths. There are two principal forms of new growths: (1) the keratotic; and (2) the larger, or elastic, which are, in reality, simply an exaggerated form of the first. Malignant new growths were recorded in 16 out of 30 cases, and non-malignant in 6 cases. In 9 cases in which there were as yet no new growths, 6 of the patients were under the age of twelve. Out of Dr. Taylor's own 7 cases, epitheliomata were found in 3. It is to be borne in mind that in any of the 6 cases with benign new growths, these growths might at any time become malignant. The statistics would seem to show that in this disease the greatest malignity is exhibited under the age of ten years; nearly as great between the ages of ten and twenty; and after that a diminished tendency to malignancy. It is certainly a singular fact, that epithelioma should develop in such young subjects. There was no evidence of metastasis in any of the cases.

Having remarked that it is impossible to give an exact description of all the tumors met with, Dr. Taylor proceeded to present the views of Kaposi, Neisser, and Pick in regard to the pathology of the disease.

The horny layer of the skin is thickened and desquamating, the stratum lucidum and stratum granulosum disappear, the Malpighian layer is thinned, and its deeper cells are strongly pigmented. The derma is atrophied; the papillæ are quite apparent, and certain masses of pigment are seen; numerous embryonic cells are met with, and a quantity of elastic fibres, which appear to have replaced the connective tissue to some extent. The vessels, the smooth muscular fibres, the sudoriferous glands, and the pilo-sebaceous follicles are diminished in number and tend to disappear. The fungous tumors usually present the histological character of epithelioma, and the most common disposition is that of a lobulated epithelioma with the fibrous stroma infiltrated with embryonic cells. In some instances the new growth was found to be of the nature of angio-myxoma.

Intelligent medication, extending over several years, had proved quite ineffectual, and no case of the disease had ever been cured. In the treatment measures should be taken to keep the skin at rest and free from all sources of irritation. All pigmentation warts should be removed as soon as possible with the spoon. All large tumors should also be extirpated, and the subjacent tissues thoroughly scraped, if necessary to the bone or periosteum.

In answer to a question from the President in regard to the absence of connective tissue, Dr. Taylor said that in this disease the papillæ are primarily involved, and the subcutaneous connective tissue only secondarily.

DR. JACOBI then said that according to some authorities most, and to Cohnheim all, malignant tumors, occurring at any age, are the result of embryonic cells not undergoing the accustomed changes and remaining behind in normally developed tissue; and if this theory is to be accepted it will sufficiently explain the appearance of those malignant growths in early childhood. Furthermore, the fact that the bloodvessels are largely increased is no doubt the result of the embryonic tissue remaining; and these bloodvessels, it is to be noted, are not in a normal condition. He thought it probable that the occurrence of spontaneous thrombosis might explain the disappearance of the red spots and other phenomena noticed in the disease in question. On the whole, therefore, it seemed to him as if there was an arrest of the metamorphosis of embryonic tissue; and, if this were the case, he thought that in the treatment of this affection it might do good to increase the quantity of normal

connective tissue, if possible, and thus fortify the parts against the further development of abnormal growths.

For this purpose (provided the supposition mentioned was correct) there are two remedies which suggest themselves as preëminently indicated. These are, first, arsenic, and, second and better still, phosphorus. By the irritation excited by proper doses of these agents it seems possible to cause a good, solid normal nutrition to result. It is well known that phosphorus favorably influences the normal growth of bone, and for some years past he has used it with satisfactory results in caries and other bone disease. He has found it of special service in cranial rachitis. The phosphates or other compounds are of no value, and it is necessary to use phosphorus itself, administering it in oil or emulsion. It may be given in doses of one one-hundredth of a grain, corresponding to one minim of the old oleum phosphoratum twice a day, and its use maintained for a long period.

DR. TAYLOR, in conclusion, said that he thought these suggestions of the President very valuable and practical, and that if he should meet with another case he would institute a systematic course of medicinal treatment in accordance with them. At the same time, he thought the surgical measures to which he had referred in the paper were of decided benefit in controlling some of the more serious results of the disease; and contrary to what might perhaps be expected, he had found that, as a rule, the tissues healed well after the removal of the new growths.

CORRESPONDENCE.

PEROXIDE OF HYDROGEN IN THE TREATMENT OF DIPHTHERIA.

To the Editor of THE MEDICAL NEWS,

SIR: The most potent remedy for diphtheria is being entirely overlooked by the medical press and profession.

The peroxide of hydrogen will, in all stages of diphtheria, pseudo-membranous croup, and ulcerations of the mouth and throat, and stomatitis, act most admirably.

All physicians who have practised in districts periodically, or occasionally, visited by diphtheria, will recall the cyanosed condition of the little sufferer presaging death. Even after this condition plainly predicts poisoning of the blood by carbon the patient can be quickly relieved by fifteen or twenty drop doses of the peroxide internally, diluted with one or more tablespoonfuls of water. The throat should be gargled or swabbed with a solution composed of equal parts of peroxide of hydrogen and water, every half hour or oftener, or the solution may be used with an atomizer. All articles used for wiping the face or mouth should be kept sprinkled with the peroxide and all cuspidores or vessels should contain enough of the peroxide to destroy all germs contained in the sputa or excreta.

This remedy is not intended to supplant such auxiliary treatment as may be indicated, but will be found, used in conjunction with iron, potassium, stimulants, cardiac tonics, and nutritives, the nearest approach to a specific of any remedy heretofore used in diphtheria. Practical experience has made me rely on peroxide of hydrogen in diphtheria, and I earnestly ask that it be used, knowing that the results will be *startlingly successful.*

Yours truly,

WHITE BEAVER.

LA CROSSE, WIS., January 30, 1888.

THE CROWN PRINCE'S CASE.

To the Editor of THE MEDICAL NEWS,

SIR: Your issue of December 31, 1887, is just to hand, and I have been interested in reading the letter from Berlin contributed by Dr. F. Donaldson, Jr. In his remarks referring to my friend Morell Mackenzie's treatment of the case, he repeats some ridiculous stories, which have originated in the fertile German brain (but which are apparently still current in Berlin), as to Mackenzie not having permitted any German to examine the Crown Prince's throat until recently; and that Landgraf, who was sent to England with the Crown Prince, was also prevented from making examinations. To this statement I can give the most unqualified denial, and I scarcely think it can have originated with Dr. Landgraf himself.

From the time the Crown Prince came to England, to the time he left it, I was myself in daily attendance. I lived in the same hotel with him and with Dr. Landgraf until the Crown Prince left Norwood. Dr. Landgraf at first every morning, afterward whenever he chose to accompany me on my daily visit to the Prince, examined the Crown Prince's throat, for as long, and in whatever manner he pleased, and it is simple calumny to say that Mackenzie or anyone else prevented Landgraf from seeing the Imperial throat as often as he thought fit.

These matters are scarcely worth mentioning, except that they show the present animus of the German mind, which, for some months has, by a series of petty (or worse) vilifications, sought to damage Mackenzie. These attempts to sow the seeds of discord have met with a very receptive soil amongst a certain section of pseudo-Englishmen. The German nation has to thank Mackenzie for much. That their diagnostic powers are not infallible, they may not be prepared to admit, but may live to see. It is easy to understand that the course and prospects of the case are a hard pill to swallow, for what one of your American writers has described as "the vainest race in the world."

I am sir, yours, etc.,

R. NORRIS WOLFENDEN, M. D.

LONDON, January 26, 1888.

NEWS ITEMS.

The Water of New York Bay in its Relation to Cholera.—The *Weekly Assistant of Sanitary Reports* of February 3, 1888, issued by the Supervising Surgeon-General of the United States Marine Hospital Service, contains the following report of an analysis of the water of New York Bay, by Assistant Surgeon J. J. Kinyoun, Marine Hospital Service:

The cities and towns discharging their sewage into the New York Bay have an estimated population of 3,000,000 of people. In view of this fact, a chemical and biological examination of the bay water was undertaken, for the purpose of determining its contents, and also to find how

long it would support life of the different microörganisms, more especially that of Asiatic cholera. Accordingly, specimens were obtained at different places, being collected in sterilized flasks. The first was obtained at the Narrows; the second, alongside the steamship "Brittania" (lying in quarantine); the third, at Hoffman Island, and the fourth, at Swinburne Island. These different specimens were collected within thirty minutes, and just at incoming tide.

Chemical examination of one litre:

Narrows—	
Chloride of potash and soda	20.8 grammes.
Carbonates	A trace.
Iodine	"
Free ammonia	"
Albuminoid ammonia	0.158 gramme.
Steamship "Brittania"—	
Chloride of potash and soda	20.82 grammes.
Carbonates	A trace.
Iodine	"
Free ammonia	"
Albuminoid ammonia	0.158 gramme.
Hoffman Island—	
Chloride of potash and soda	21.64 grammes.
Carbonates	A trace.
Iodine	"
Free ammonia	"
Albuminoid ammonia	0.158 gramme.
Swinburne Island—	
Chloride of potash and soda	21.814 grammes.
Carbonates	A trace.
Iodine	"
Free ammonia	"
Albuminoid ammonia	0.158 gramme.

Reaction was slightly alkaline.

Plate cultivations were made from each of the different specimens, and at the end of five days had developed colonies of bacteria. Examination showing the number of microörganisms:

Narrows	4,500	to cubic	centimetre.
"Brittania" anchorage	10,200	"	"
Hoffman Island	9,600	"	"
Swinburne Island	11,700	"	"

The microörganisms found in each were several varieties of micrococci and one of a large bacillus. These were transferred to cultivation-tubes for further observation. On November 12, test-tubes, partly filled with sea-water, were thoroughly sterilized and inoculated in the usual manner, with pure cultivations of the spirilla of Asiatic cholera, and also of Finkler and Prior. Cultivation-tubes were inoculated from the water from day to day for the purpose of determining the longevity of the growths. During the first five days the water seemed to exert a slight inhibitory influence over their development. It was further observed that until January 20, a period of sixty-nine days, the characteristic growths of the spirillum of cholera Asiatica could be produced in peptone gelatine. That of Finkler and Prior has a yet longer lease of life.

Examinations made from time to time, both by the plate method and direct staining, show conclusively that these spirilla have not only been kept alive, but have also greatly increased in numbers.

After closely studying the currents of the upper bay, Dr. Kinyoun is led to believe that if dejecta from cholera patients should be thrown into the lower bay, cholera could gain a foothold on the contiguous shores, where every condition favorable to its development and propagation sometimes exists.

A Bill to Increase the Efficiency of the Medical Division of the Pension Bureau.—Mr. Burrows has introduced into the House of Representatives a bill by which it is proposed that the medical staff of the Pension Office shall consist of one medical referee, one assistant medical referee, three surgeons, and twenty-four medical examiners.

That the medical referee shall be a man of preëminent professional ability, and shall receive the sum of four thousand dollars annually. He shall be the chief of the Medical Division, and as such shall oversee and arrange the work of said division.

That the assistant medical referee shall also be of pre-eminent professional ability, and shall receive an annual salary of three thousand and six hundred dollars.

That the three surgeons shall be experts in their profession, and shall each receive an annual salary of three thousand dollars.

That the medical examiners shall be surgeons of education, skill, and experience, and shall receive each an annual salary of two thousand and five hundred dollars.

He has also introduced a bill to increase the efficiency of Boards of Surgeons for the examination of pension applicants, by which each member of each Board of Surgeons for the examining of applicants for pensions, shall, as now authorized by law, receive the sum of two dollars for the examination of each applicant.

That the Secretary of each Board of Surgeons shall receive a further compensation of fifteen cents for each examination.

That the Secretary of each Board of Surgeons shall be, and hereby is, empowered to employ a clerk, and for the official conduct and pay of such clerk the said Secretary shall be responsible.

The Restriction of Immigration.—A pregnant suggestion was made by Dr. John H. Rauch to the Illinois State Board of Health at its annual meeting last week. The veteran secretary, in discussing features of maritime quarantine, suggested that immigration be restricted by Congressional action, to those points where an efficient quarantine exists. This would be a good measure to carry out, but its ultimate effect would be still better. Let all the immigration to this country go to New Orleans, for example. How long would it be before diverging railway lines from New York City, and other commercial interests which feed upon immigrant travel, would demand, in unmistakable tones, that New York quarantine should be put in efficient condition?—*Sanitary News*, January 21, 1888.

The Children's Ward of the Presbyterian Hospital.—This most recent addition to the Presbyterian Hospital, of Philadelphia, was recently opened with appropriate ceremonies. The building and its equipments are the gift of Mrs. John Wanamaker. All which modern architecture and sanitary science could suggest have been done to perfect the structure, and in its appointments it is one of the best in America.

Hysteria and Malpractice.—At St. John's, N. B., suit was recently brought against a physician for malpractice, in producing convulsions by the administration, to a woman, of strychnia in doses of $\frac{1}{14}$th of a grain. The medical testimony for the plaintiff considered the dose as larger than prudence would indicate in the beginning of treatment by strychnia. The defendant asserted that the convulsions alleged to have followed the taking of strychnia were hysterical.

A verdict for the defendant was returned. The practitioners who testified varied in their doses of strychnia given from $\frac{1}{60}$th to $\frac{1}{12}$th of a grain.

Capital Punishment by Electricity.—FELL, of the Niagara University, Buffalo, has made a series of experiments upon animals to determine the possibility of resuscitation after the reception of a severe electric shock. He found such a shock thoroughly efficient, and gives his conclusions as follows:

First. That death, produced by a sufficiently powerful electric current, is the most rapid and humane of that produced by any agent at our command.

Second. That resuscitation after the passage of such a current through the body and functional centres of the brain, is impossible.

Third. That the apparatus to be used should be arranged to permit the current to pass through the centres of function and intelligence in the brain.—*Buffalo Medical and Surgical Journal*, February, 1888.

A Patent on Chloroform.—By a decision rendered in the United States Circuit Court of New Jersey the claim of the Albany Chemical Company is sustained, and the validity of their patent for the manufacture of chloroform from calcium acetate is established.—*Pharm. Record*, January 15, 1888.

Trichina in Ducks.—Twenty persons in Inoweal-law, Posen, were recently attacked with symptoms of trichinosis, and an investigation showed that they were poisoned by eating the flesh of trichinous ducks.—*Sanitary Inspector*, January, 1888.

The Fifth International Veterinary Congress will be held in Paris in September, 1889, under the presidency of Chaveau.

An Octo-centennial.—The University of Bologna will celebrate in June next the 800th anniversary of its establishment.

The London Medical Recorder.—It is announced that the *London Medical Record* is not to be discontinued, but transferred to a new business management, who announce its continuance under the same editors, but with a new name, and changes in its subscription terms calculated to adapt it to a more extensive circulation.

L'Electrotherapie is the title of a new journal devoted to electro-therapy, recently published in Paris. The editor in Léon Darion.

The Neglect of the Study of Medical Literature.—In a recent number of the *Berliner klinische Wochenschrift*, VIRCHOW laments the disinclination of the present generation of medical students to study the literature of medicine. He contrasts the spacious reading-rooms, lighted by electricity, in use to-day with the narrow-windowed, inconvenient libraries of old, and urges the cultivation of literary study in men, who "at present cannot find time to go back even to Lænnec, in their literary researches."

Professor Scanzoni, of Wurzburg, has been placed on the retired list by his own request.

Dom Pedro, Emperor of Brazil, has been elected an honorary member of the Paris Society of Biology, in whose meetings he took a lively personal interest, when in Paris.

Professor Virchow will accompany Dr. Schliemann to Upper Egypt in the present month, remaining there until May.

Typhoid Fever in the Cities of Europe.—Among the cities of Europe the death rate from typhoid fever varies very much. According to Bertillon among 100,000 inhabitants there are in Vienna 14 deaths, in Stuttgart 15, in London 17, in Munich 18, in Brussels 19, in Paris 59, in St. Petersburg 90, in Marseilles, 149, in Barcelona 157, in Saragossa, 186.—*Sanitary Inspector*, January, 1888.

The Direct Gains of Sanitation.—In the town of Leek, England, with a population of nearly 14,000, the local sanitary inspector shows that in the last five years the mean expectation of after-life from birth in persons born in that town is 22 years more than it would have been had things remained as they were in the decade of 1851–61, when no real attempt had been made to grapple with the unhealthy condition of the town. Further, the actual money value to the community during the years 1861–85, from the increase of longevity and freedom from sickness, amounted from various sources to $433,900, which is equal to a direct saving of $17,356 per annum.—*Sanitary Inspector*, January, 1888.

Choosing Houses.—The *Sanitary Inspector* for January, 1888, quotes a journal of building as follows on this point:

In selecting a house, or a site for a new one, remember that where the sun will shine on the house for some hours a day one element of good is secured, especially if the sunshine enters at the windows of the living rooms or rooms most used during the daytime. After the aspect has been found to be suitable, and that a plentiful supply of sun and air is insured, attention should be given to the general position and construction of the house. If the ground is at all porous, a layer of concrete not less than six inches thick, and composed of cement or lime and broken bricks or gravel, should be spread over the whole of the ground covered by the building. This will prevent the passage of ground air up through the floors. Air will travel through the ground for some distance, and, as it invariably becomes contaminated by taking up carbonic acid gas in its passage, it is not suitable for inhaling. The house acts as a sucker on the ground, and if, unfortunately, the site is on "made" ground—that is, composed of all the refuse of a town—the ground air becomes the medium of disease. No houses should be built without a well-ventilated air space between the earth and the

ground floor, especially if the layer of concrete on the surface is omitted. The walls should be built of good hard-burnt bricks or non-porous stones set in lime or cement mortar. Common under-burnt bricks or porous stones hold moisture, which evaporates with the rise in temperature, and so chills the air in the house. If the bricks or the stones of the walls are suspected of holding moisture, the whole of the external surfaces should be covered with cement, or tiled or slated above. The foundations of the walls should rest on thick beds of concrete bedded in the earth; and to prevent the ground damp rising up the walls, a damp-proof course of slates, in cement, or a bed of asphalt should be laid in the full thickness or width of the wall just above the ground line. Dryness in this climate is so essential to health, that any building which in its floors, walls, or roof sins by admitting moisture, should be rejected as a place of residence by those who value their health. In tropical climates buildings are constructed to keep out the heat, but here we build to retain the heat and keep out the cold.—*Building.*

Christmas Gifts to the Crown Prince's Physicians.—The attending physicians and surgeons of the Crown Prince of Germany have not been neglected by their illustrious patient during the season of "peace and good will to all men" recently passed. For example, it is reported that Sir Morell Mackenzie has received as a present a valuable case of instruments; Herr Krause a diamond pin; Herr Schrœter two superb Japanese vases; Herr Bergmann twenty-four silver table ornaments; and Herr Schmidt, a gold inkstand. Apart from the intrinsic value of the gifts, it is quite possible to conceive that the possessors will treasure them as an earnest proof of the gratitude of the distinguished donor, on whose behalf their best efforts have been lately expended in order to avert distressing circumstances.—*Medical Press and Circular*, January 11, 1888.

The Electrical Treatment of Sewage.—The treatment of the enormous masses of sewage which pour forth from our large cities has for years been a problem, the solution of which has been attempted by means of series of very costly and more or less unsatisfactory experiments. At the present moment colossal works are in the course of construction for the precipitation of London sewage by the best known process, involving an expenditure of hundreds of thousands of pounds. Attention has just been called to a novel departure in the treatment of sewage. It has been discovered that the passage of an electrical current through it speedily generates enough gas to collect the solid particles into a scum on the surface, leaving the residual liquid clear and comparatively pure. Measures are shortly to be taken to test the value of this procedure in practice. Much as we are led to expect of electricity, from the disintegration of a fibroid to the removal of superfluous hairs, this, its last application, has the merit of novelty if nothing more.—*Medical Press and Circular*, January 11, 1888.

Carcinoma of the Larynx in Different Countries.—M. MOLLIÈRE, of Lyons, thinks that carcinoma of the larynx must be much more common in Germany and Italy than in France and England, for while he himself, though he sees annually some 7000 surgical patients, has never had a case suitable for extirpation of the larynx, and this operation is known to be a very uncommon one in France and in England, no less than 76 cases were mentioned at the Dresden Congress, and 101 operations are referred to in the Italian *Archives of Laryngology.*—*Lancet*, January 14, 1888.

Accident in a Chemical Laboratory.—While Professor Cazeneuve of the Faculty of Medicine at Lyons, France, was recently supervising a chemical analysis, the glass vessel containing the substance exposed to heat exploded with great violence. A small fragment of glass was driven into the eye of the Professor; it was promptly removed, and it is hoped that no serious damage will result. His face was also considerably wounded.

A Death from Neuralgia.—The *Lancet* of Jan. 7, 1888, reports the following case: Neuralgia, although one of the most painful maladies that the human race suffers from, has seldom been known to have proved fatal. A case, however, which occurred recently near Coagh, in the north of Ireland, would appear to have proved an exception. A lady suffered from neuralgia for forty days without any intermission of the pain, and it is alleged that she obtained no sleep during that lengthened period, although every means that medical skill could suggest were tried without effect. That the patient obtained no sleep for forty days is contrary to all physiological laws; but probably what sleep the unfortunate lady obtained was very trifling and inadequate, and it is most likely that death was due to the exhaustion occasioned thereby.

A Roman Sanitarium.—An important discovery has just been made at Suzo, about six miles from Castelforte, which points to the conclusion that the Romans were acquainted with the use of mineral springs for medicinal purposes. The erection of new mineral baths is contemplated by Signor Giuseppe Duratorre in that spot, and during the work of excavation the remains of what prove to be old Roman mineral baths have been met with. The buildings are situate about 250 feet from the right of the river Garigliano, which was formerly crossed there by a bridge, the remnants of a pier of which may still be seen in the river, and cover an area of 187 feet by 131 feet. A road paved with basaltic lava separates the two principal groups of buildings. To the left of this road, and leaning against the mountain-side, is the bath for hot mineral springs. The atrium is entered, as in classic dwelling-houses, through a portal adorned with columns, its floors being laid in black-and-white mosaic, and its roof probably formerly supported by four columns. Between these columns is the impluvium, a square marble basin, round which are seats, which leads to the supposition that it was used for bathing purposes. In the middle of the impluvium a hollow marble column supported a small basin of alabaster, into which the water rose through the column, flowing over its edges into the large basin. The further wall of the atrium opens into a large hall; through its side walls corridors lead into chambers to the right and left, the use of which for bathing is indicated by the whole arrangement of water basins and a network of water conduits, some of which are placed in the walls. On the outer side of the main road, with a view toward the river, two buildings are located, in front of which a row of columns with walled parapet probably enclosed a garden extending along the river bank. Between

the two buildings, containing rooms of various sizes, all of which open into outer corridors surrounding them, a colonade provided with seats has been erected. It is concluded that this group of buildings formed a hosptium or inn for the bathing guests—that is to say, a hostelry for those staying for their cure. The purpose of the whole establishment is also shown by the statuary found in a more or less damaged condition in the atrium. They include an Æsculapius, several female wall statues, and a statuette of a nymph, the upper part of the body nude, the lower draped. The marble of the statuary has been much injured by the mineral water, and its probable merit cannot, therefore, be easily estimated. Among the other finds a large cut amethyst may be mentioned, which contains in an oval two and a third inches by one and three-quarter inches a well-executed bust of a winged Nike. The sanatorium must have flourished for a long time, for, together with coins of Augustus's and Vespasian's time, Arabian and Norman gold coins have been found.—*Exchange.*

Great Brains.—The Paris correspondent of the *Lancet* of January 7, 1888, writes that at the Société de Psychologie Physiologique M. Manouvrier read a report upon the brain of the late Dr. Bertillon, the eminent statistician, and compared it with the brain of Gambetta, which has been studied by Mathias Duval and Chudzinsky. In weight Gambetta's brain was below the average, only scaling about 48 ounces. That of Bertillon exceeded the usual weight, reaching about 63 ounces. It is now admitted that, other things being equal, the weight of the brain is in proportion to the intelligence of the individual, and, moreover, the greater the intelligence the greater the absolute and relative development of the frontal lobes. A comparison of the brains of Gambetta and of Bertillon shows that the former is smaller, more particularly in the anterior portion, less so posteriorly, and that the temporal region is even larger. Now, the qualities of the two men were diametrically opposite. Gambetta was active and loquacious, Bertillon was reticent and retiring. Although an admirer of oratory, he had always failed as a speaker. In Gambetta's brain the convolution of Broca is extremely developed, in Bertillon's it is reduced to its most simple expression. Bertillon was in his youth left-handed, but he became ambidextrous later in life. The third frontal convolution on the right side (the speech centre of the left-handed) is larger than the corresponding one on the left side.

Female Medical Students at Zurich.—A professor of clinical medicine at Zurich, in a recent lecture, gave by his subject matter offence to his female hearers, they accordingly abandoned his lectures *en masse*. In return, the male students rallied to the support of their esteemed teacher, frequented his lectures and clinic, and addressed to him a formal expression of their sympathy.

It is evident that coeducation in medicine at Zurich is not without difficulties. Zurich affords, at present, the best opportunities to women of the centres of medical teaching on the Continent.

House Filters.—The *Lancet* Analytical Sanitary Commission has recently reported upon four kinds of filters, at present in the market. The tests made resulted in favor of the filter, whose essential portion was "spongy iron." Gas coke was recommended for trial as a filtering agent.

John Dean, M.D., M.M.S.S.—At the age of fifty-seven, this pioneer anatomist and microscopist of the nervous system died recently in Florence, Italy. He graduated from Harvard Medical School in 1860, and immediately completed microscopical researches upon the "Lumbar Enlargement of the Spinal Cord," and the "Gray Substance of the Medulla Oblongata and Trapezium," which were the first American researches in the minute anatomy of the central nervous system. His health, however, rapidly failed, and his later years were spent in hopeless invalidism. He generously gave his books, apparatus, and a choice collection of microscopic specimens to the Harvard Medical School.

Tito Vanzetti.—This distinguished surgeon, an octogenarian, died in Padua, on January 6, 1888. He had been for many years Professor of Clinical Surgery in the University of Padua, and had been the recipient of the highest honors. From his ample fortune he left $20,000 for the advancement of clinical surgery in his university.

CORRIGENDUM.

IN the article by Dr. Vaughan and Mr. Novy on "The Causation of Typhoid Fever," in our issue of January 28, page 95, second column, third and fourth lines from the top, *for* "which, when boiled," *read*, "which had been boiled."

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM JANUARY 31 TO FEBRUARY 6, 1888.

PROMOTIONS.

PAGE, CHARLES, *Lieutenant Colonel and Surgeon.*—To be Assistant Surgeon General with rank of Colonel, Nov. 17, 1887.

MCKEE, JAMES C., *Major and Surgeon.*—To be Surgeon with rank of Lieutenant Colonel, November 17, 1887.

GIRARD, ALFRED C., *Captain and Assistant Surgeon.*—To be Surgeon with rank of Major, November 17, 1887.

RAYMOND, H. I., *First Lieutenant and Assistant Surgeon.*—Ordered to Fort Bidwell, California.—*S. O. 25, A. G. O.*, January 31, 1888.

FISHER, W. W., *First Lieutenant and Assistant Surgeon.*—Ordered to Presidio of San Francisco, California.—*S. O. 25, A. G. O.*, January 31, 1888.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE-HOSPITAL SERVICE, FOR THE WEEK ENDING FEBRUARY 4, 1888.

CARMICHAEL, D. A., *Passed Assistant Surgeon.*—Detailed as attending surgeon and Acting Chief Clerk, Supervising Surgeon-General's Office, February 2, 1888.

URQUHART, F, M., *Passed Assistant Surgeon.*—Granted leave of absence for twenty days on account of sickness, Feb. 3, 1888.

WILLIAMS, L. L., *Assistant Surgeon.*—Ordered to examination for promotion, February 2, 1888.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

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